THE MARINE CORPS GAZETTE

JUNE, 1944 OVERSEAS EDITION

WINGS OVER THE PACIFIC

Events of a Month

The following chronological summary of events from April 10 to May 9, 1944, is furnished by special arrangement with *Current History*. Events in which Marines are known to have participated, or of special significance to them, are indicated in bold type.

ON THE BATTLEFRONTS

April 10—The Soviet Army captures the Black Sea port of Odessa, while the offensive in the Crimea continues. In Roumania, Russian forces cross the Siretul and Suceava Rivers and reach the base of the Carpathians in a 22-mile advance.

Japanese troops evacuate Cape Hoskins and Gasmata in central New Britain leaving 10,000 dead behind.

In India, the Japanese penetration reaches Bishenpur, 50 miles inside the Indian border and threatens the Bengal-Assam railroad.

April 11—Russian forces capture Kerch and Dzhankoi in the Crimea.

American destroyers, bombers and fighters make a heavy attack on the Japanese base at Hansa Bay, New Guinea.

The Japanese advance in India threatens to cut off the British strong point of Kohima. Secretary of the Navy Knox minimizes the Japanese threat to India and declares that the Allies have seized the initiative in the Pacific.

April 12—A two-pronged Allied air attack by planes based in Italy and Britain strikes at targets in Austria, France and Belgium.

The British Air Ministry announces that mines dropped along the coast of Europe have sunk or damaged 500 to 1,000 enemy ships.

Zagreb is attacked by United States heavy bombers, in support of the Yugoslav Partisans.

Air-borne Allied forces cut Japanese supply lines in India.

April 13—In one of the heaviest raids of the war, 3,000 Allied planes based in Italy and Britain attack Germany, Hungary, Belgium, France and Yugoslavia. The Germans lost 134 planes, the Allies 58.

Soviet troops capture Simferopol, capital of the Crimea, and the Black Sea ports of Yevpatoriya and Feodosiya.

Hollandia and other bases on the New Guinea coast are attacked.

April 14—Russian forces now hold four-fifths of the Crimea.

The air war over western Europe continues after a week in which 15,000 tons of bombs were dropped and 700 German planes destroyed.

Japanese forces reach the Bishenpur-Silchar road and now almost completely surround Imphal, India.

Bogadjim, New Guinea, is captured by Australian troops. Wewak, Rabaul and Truk are bombed. Planes based in the Aleutians strike at the Kuriles for the fourth straight day.

April 15—**Admiral King, commander-in-Chief of the United States Navy announces that Japan has lost 2,000,000 tons of cargo shipping and that crippling blows have been dealt the Japanese Navy.**

April 16—Japanese islands from the Kuriles to Truk were under attack by a three-pronged Allied air blow.

April 17—According to an American authority, German fighter protection has been drastically reduced by recent losses. In the past six months Allied attacks on aircraft factories have cost the Germans 5,000 planes, while a further 5,260 have been shot down in combat.

April 18—United States planes strike at Berlin in force as 1,000 bombers and an equal number of fighters make a daylight raid on industrial objectives.

Chinese troops enter Warazup in the Mogaung Valley of Burma.

In China, the Japanese launch a drive to clear two railways vital to their supply lines to southern Asia.

April 19—More than 2,000 American planes raid the Netherlands and the Pas-de-Calais area of France. A total of 8,000 tons of bombs were dropped in a 36-hour period.

An Allied charge breaks the Japanese siege of Kohima, India, and reopens the road to reinforcements from Dimapur.

Allied flyers attack the Caroline and Marshall Islands.

April 20—Japanese-occupied Sumatra which controls the access to Singapore is attacked by a powerful Allied fleet. Docks and other installations are set afire. Heavy aerial activity also continues over Truk, Ponape, Wake Island, Timor and Netherland New Guinea.

Secretary of War Stimson denies that the War Department has attempted to cover up "blunders," such as the shooting down of American planes by Allied guns.

April 21—Lieutenant-General George Patton, Jr. arrives in England from the Mediterranean theatre, presumably to participate in the coming invasion.

Rail yards, bridges and shipyards in northern Italy are raided.

Japanese forces gain in north China near Chengchow but are pushed back in eastern India.

April 22—Japanese troops reach the outskirts of Chengchow in North China. The Japanese threat to Kohima and Imphal has been temporarily removed.

American forces occupy two more atolls in the Marshalls, bringing the total to 20.

Units of the American fleet are now operating in the Indian Ocean and participating in the recent attack on Sumatra.

April 23—Navy Chief Admiral Ernest King declares that the health of the service is excellent and that treatment of casualties and disease has improved 33 per cent due to the development of air evacuation.

In the greatest American offensive to date in the Southwest Pacific, two landings were made yesterday at Hollandia and Aitape on New Guinea, following a fierce air and sea bombardment. According to General MacArthur, 60,000 enemy troops have been encircled whose "situation reverses Bataan." These operations bring the Philippines within range of land-based planes.

Planes based in Italy raid the Messerschmitt plant in Austria.

April 24—American forces at Hollandia and Aitape advanced steadily.

Japanese communications are attacked by glider-borne troops dropped 200 miles inside Burma. This United States Air Commando force is now considered a "marvel of efficiency."

In central Honan Province, 60,000 Japanese forces advance, while American planes sink 20,000 tons of Japanese shipping in a surprise attack on Saigon, French Indo-China.

Rear Admiral Ramsey, Chief of the Navy Bureau of Aeronautics, declares that the United States will have more than 100 aircraft carriers by the end of the year.

April 25—German losses in the fighting in the Ukraine total 500,000 killed and captured in the past two months, according to a Soviet military authority.

American forces occupy Ujelang in the Marshall Islands.

The situation in India improves with the Japanese in full retreat from the Kohima Road.

April 26—Two airfields near Hollandia are seized by American landing forces, while to the south Australian forces moving down the Ramu Valley take Madang and its airfield.

April 27—The latest figures on American casualties include 148,425 for the Army and 44,411 for the Navy.

Western Europe is raided by 4,500 Allied planes.

The campaigns for Hollandia concludes with the capture of the last airfield, and to the south, Australian forces capture Alexishafen. Plans for the Hollandia action and for future strategy were formulated at a meeting of General MacArthur and Admiral Nimitz.

Chinese military authorities announce the fall of Chengchow in Honan Province.

April 28—Chinese troops push Japanese forces away from Hulao Pass, gateway to Loyang.

A Japanese attempt to evacuate their forces in northern New Guinea by air is halted as Allied planes wreck all enemy planes based on the four enemy-held air strips at Wewak. Land-based Allied planes attack Guam for the first time.

April 29—**Ernest Bevin, British Minister of Labor, declares that the date for the invasion has been set.**

April 30—General Doolittle, chief of the United States Eighth Air Force, declares that his men destroyed 1,300 German planes in the month of April.

Japanese forces open a new drive in Anhwei Province, as their advance around Chengchow is halted.

May 1—The War Department announces the sinking of a troopship in the Mediterranean, with a loss of 498 lives.

Japanese forces capture Hulao Pass and Yingshan.

In Burma, General Stilwell's forces are within 30 miles of Mogaung.

May 2—The American naval force returning from the attack on Hollandia, strikes at the Truk-Ponape area and leaves the installations a mass of ruins.

Allied planes and PT boats sink 20 Japanese supply barges off Wewak.

Figures for April show that in one month 81,400 tons of bombs were dropped on Axis territory.

May 3—The Japanese drive in Honan Province gains.

(Continued on inside back cover)

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"Struggling through slimy mud with heavy loads, the vicious claw vine snagging their flesh, slippery roots tripping them, the odor of dead Japs growing heavier in sultry green jungles."

The Battle of Piva Forks

By Major Donald M. Schmuck, USMC

In the May issue of The Marine Corps Gazette, *our leading story gave the over-all picture of the Third Marines at Bougainville. In this article Major Schmuck, who commanded Co. F, gives a close-up of the Battle of Piva Forks, one of the most crucial actions of the campaign.*

THE proud fighting record of the Marine Corps includes battles representative of every type of operation. Most of these actions may be classified under one of three interrelated categories: defensive battles, offensive battles, and assault landings. While the difference between the offensive battle and the assault landing may not be clear to some, there are numerous characteristics about the scrambling, free-for-all fight of the assault landing which distinguishes it sharply from the controlled, inland offensive operation.

In the first two years of Pacific amphibious warfare, three hard-fought battles stand out as typical of the three categories: the defensive Battle of Bloody Ridge in Guadalcanal; the offensive Battle of the Piva Forks in Bougainville; and Tarawa, the greatest of assault landings. The latter two were fought simultaneously. Every man knows of the epic fight on the torn beaches of Betio; less is known about the grim struggle on the Piva Forks deep in the steaming jungles of Bougainville. The action which determined the fate of the largest and most heavily defended of the Solomon Islands well deserves its place on the roll of Leatherneck victories.

In the bitter jungle warfare of the South Pacific, the rifle company has been the combat unit which decided, sometimes independently, the course of battle. During many months of fighting in the Solomons by the First, Second, and Third Marine Divisions, there have been few cases where it has been possible to maneuver an entire reinforced regiment in protracted, coördinated, offensive combat against strong enemy forces defending a terrain objective. The Battle of the Piva Forks in Bougainville, however, is an outstanding example of such an action.

This is the story of the five-day struggle between the Third Marines, of the Third Marine Division, and the Japanese reinforced 23rd Infantry for possession of the vital high ground controlling the Piva bomber strip. It is the story of a seasoned Marine regiment fighting its way through the dense jungle swamps of Bougainville, utilizing to the utmost every weapon and service of the reinforced regiment, executing all the tactical evolutions practicable to jungle warfare, and solving the staggering problems of control, supply, and evacuation incident to a rapidly moving operation deep in one of the world's worst jungles. Here between November 19th and 27th, 1943, the Third Marines, already tired and ragged from weeks of fighting since their assault landing, located, attacked, and destroyed a Japanese regiment which fought and counterattacked from its commanding positions with artillery and mortars, machine guns, hand grenades, land mines, booby traps, and even flame throwers. That this defeat was a tremendous loss to the Japanese has been increasingly evident. In later attempts to regain the lost ground, the Japs made repeated suicidal charges against the American defenders. Thousands of the enemy died in fanatical rushes upon the barbed wire in desperate attempts to regain control of this area.

By the 18th of November, the First Marine Amphibious Corps, under the command of Lieutenant General Vandegrift, had repulsed Jap landings and was racing to expand the Torokina beachhead in Empress Augusta Bay before the 25,000 Jap combat troops in Bougainville could strike back in force. The Third Marine Division, commanded by Major General Allen H. Turnage, held the right or eastern half of the beachhead, containing the Cape Torokina fighter strip and blocking the main trails into the area from Kieta and Jaba. The Third Marines, under Colonel George W. McHenry, held a moving position on the northeast sector of the division front, the 1st Battalion being held in reserve after the Battle of the Koromokina River. The 2nd Battalion temporarily covered the right flank of the 37th Army Division, exposed to Jap forces along the Numa-Numa Trail; the 3rd Battalion straddled the trail which bent westward across the front.

THE Third Marines had been in constant action or movement since the assault landing and battle on November 1st. Thousands of yards of reeking swamps lay between them and the supply dumps. The heavy dark jungle was infested with snipers who preyed upon command posts, aid stations, and carrying parties. Seabees, working desperately to push roads through to the fast-moving front, enabled trucks to get only part way—the indispensable amphibian tractor carried on from the road ends.

Only the barest combat essentials reached the companies—two emergency rations daily and ammunition. Swamp water purified with drops of iodine was the only drinking water. The Marines carried only light combat packs, and by now the last socks they had were on their feet. Shoes rotted out, dungarees and camouflage suits were tattered and filthy, feet and legs become covered with jungle sores. Bodies were thin and hard; faces were dark and lean with that intent, almost wolfish look of the jungle fighter. They had been sniped at by day and bombed by night.

The Marine's bed was the muddy foxhole he dug each day, and often he had to sleep sitting up in the water. His only protection against the tropical rain was his poncho—and perhaps a few banana leaves. He knew his part in the combat team thoroughly; he moved through the jungle with a minimum of effort and in absolute silence; he had confidence in his weapon and in himself. He was weary, but his morale was high. He was a damn good Marine—and he

knew it. In short, it was a tough outfit which maneuvered to engage the 23rd Reinforced Regiment of the Imperial Japanese Army.

COMBAT and reconnaissance patrols ranging ahead of the 2nd and 3rd Battalions on the 17th and 18th of November, not only ambushed and killed small Jap forces, but were successful in locating strong concentrations of enemy troops on high ground to the front and to the east. Road blocks were discovered on the Numa-Numa Trail which ran northward toward Kieta, and on the East-West Trail which ran eastward across both branches of the Piva River to the Torokina and the main Jap supply bases. A platoon of G Company prowling deep within enemy territory came suddenly upon a company of Japs lounging in an assembly area. The Marines quietly deployed and attacked instantly—their automatic weapons cutting down the surprised Nips. In the resultant uproar the patrol withdrew as rapidly as it had appeared, vanishing in the jungle without a single casualty.

On the 19th, a patrol from F Company stumbled upon the rear of a Jap force engaged in attacking a 3rd Battalion outpost on the Numa-Numa Trail. The ensuing skirmish, followed up by a screening barrage of 105s, marked in blood the beginning of the rapid evolutions of the Third Marines which culminated in full regimental assault. With the enemy located, and with Marine engineers driving a tractor trail to the junction of the Numa-Numa and East-West Trails, the Regiment moved rapidly to engage the main Japanese forces before they could fully organize their ground.

On the same day, the 3rd Battalion, accompanied by tanks and preceded by an artillery preparation, advanced upon the enemy. The 3rd Raiders, attached to the regiment, moved into the division line behind them. The road block was flanked, and the enemy, apparently a company used as a screening force, fell back leaving the trees full of snipers. The battalion went into an all-around perimeter defense for the night, boxing itself in with artillery and mortar concentrations.

On the morning of the 20th, the 3rd Battalion swung northeast in pursuit of the retreating Japs. The elusive foe had fallen back to positions on high ground, and there resistance stiffened—the hollow thud of Jap knee mortars and the crash of the deadly 90mm now backed the high snap of the sniper's rifle. At this moment the 2nd Battalion was cutting due east in a rapid forced march to an assembly area near the junction of the two vital trails.

Company F, the last unit of the 2nd Battalion to be relieved in that sector by fresh Army troops, moved cross-country parallel to the Numa-Numa Trail under orders to rejoin the battalion at the assembly area. This company, typical of the jungle combat team, operated as a reinforced unit with attached heavy machine-gun platoon and artillery observer's party. The Marines of this company felt the sudden tenseness of the regiment, and as they struggled through the slimy mud with their heavy loads, the vicious claw vine snagging their flesh, slippery roots tripping them, they were not surprised when the odor of dead Japs grew heavier in the sultry green jungles. Overhead the artillery shells sighed in the direction of the enemy. Off to their left scattered rifle fire punctuated the ripping impact of mortars.

The company automatically took more interval; eyes grew watchful and expectant. Then, with no warning but a soft fluttering, Jap 90mm mortar shells fell about them, straddling the column with deadly accuracy. A moment of stunned silence—then an order from the company commander passed down the line: "Buck says continue the march!"

The column moved ahead. The Marines silently passed the shattered bodies of their fallen buddies. The walking wounded, hastily bandaged by corpsmen, rejoined their platoons and continued doggedly on. Two men, one with a foot blown off, the other blinded, were carried to the tractor trail and evacuated by jeep to the rear.

The 2nd Battalion assembly area was reached with no further delay, and the company moved rapidly into the standard perimeter defense, commencing immediately to dig in. They had scarcely unlimbered their entrenching tools, however, before the 90mm shells again tore into their midst. This time, as wounds were dressed, ugly curses trembled on tight lips—a man does not like to see his best buddy dismembered before his eyes! A grim desire to close with the enemy grew strong throughout the regiment.

THE order to move out, following on the heels of the shelling, received growls of approval—action was a relief from sitting there ducking high explosives from Nippon. A half hour later the 2nd Battalion crossed the Piva's West Fork on a mahogany bridge hastily erected by Marine engineers, passed through the wire entanglements, and out along the East-West Trail deep into Jap country. The enemy outposts left clumsy booby traps behind—and cleverly camouflaged snipers who sat silently in trees until the flanks and rear of the battalion offered easy targets. The sharp chatter of the Nambu became an ever-present reminder of the desperate personal aspect of jungle combat.

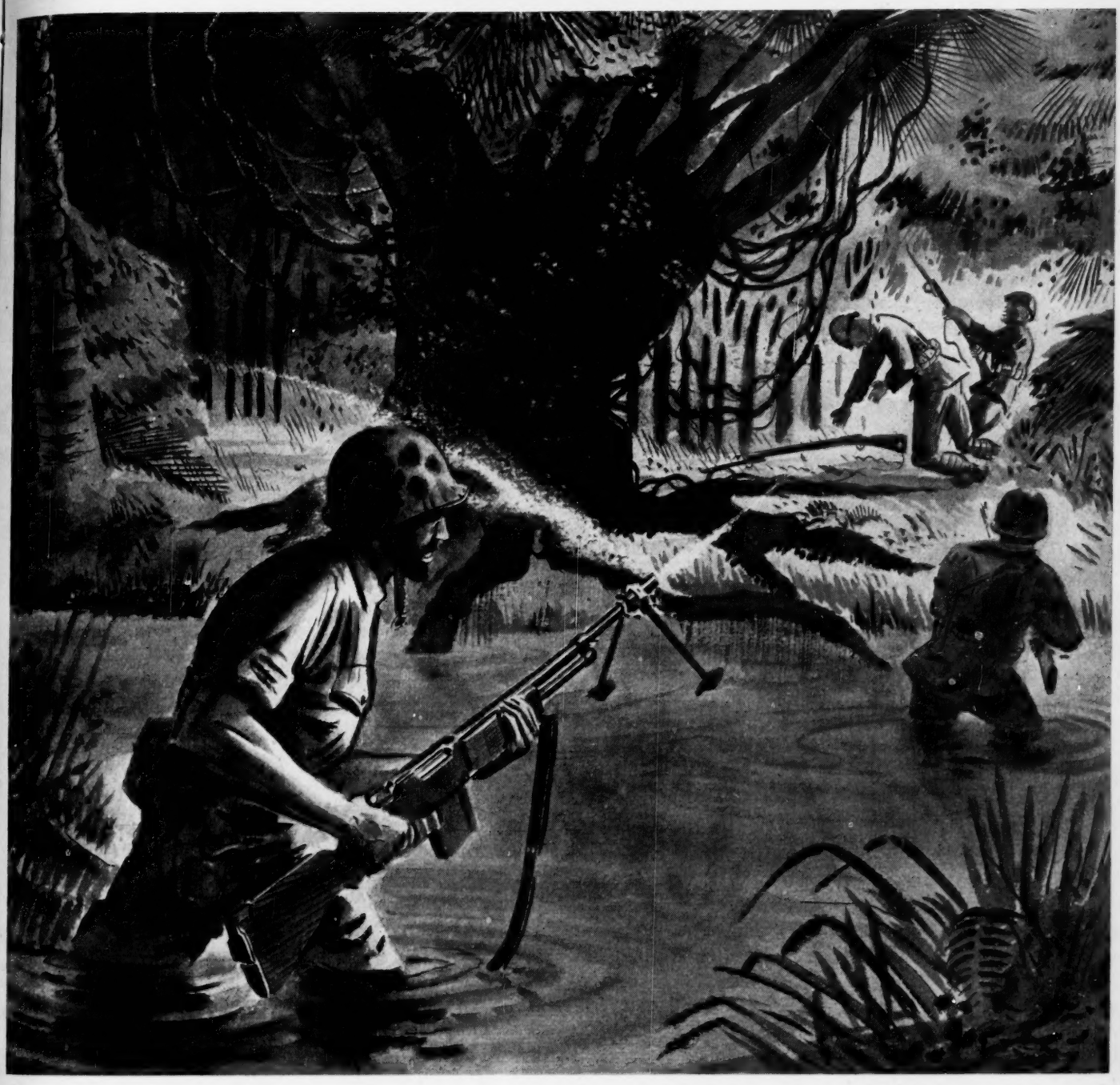
A light enemy attack on one flank was brushed off with no delay to the rapid advance of the 2nd Battalion; however, by late afternoon of the 20th, patrols reported heavy machine-gun fire from Jap bunkers commanding the east bank of the Piva and disputing further movement. The battalion established a hasty defense on the west bank of the muddy stream with G and E Companies forward on the right of the trail. Troops who ventured down the wide trail itself toward the river bank ran into a hail of rifle and machine-gun fire.

Intelligence scouts reported a ridge just left of the trail and forward of the battalion position. Lieutenant Colonel Hector de Zayas, commanding the 2nd Battalion, glanced at the setting sun and sent for F Company's commander. Orders given in combat are always brief, relying upon common sense and familiarity with standard procedure. Nicknames were always used—this time was no exception.

"Buck," he said, "we've found some high ground over there. I want you to occupy it."

"Okay, Joe," was the simple acknowledgment.

And so informally a decision was made and an order given which was to influence the course of a battle. Ten minutes later the order had reached the platoons of Company F; packs had been dropped, and Marines were moving forward on the left of the trail. Each man knew that there



"Marines, crouching in the swamp and firing from the hip, did a thorough job."

was a hill up there which was not on the map, and that they had to get up there before dark. They also knew that the Nips would probably be there to receive them. But they moved out quickly and silently, laying combat telephone wire as they went.

It will never be known why the Japs, except for a light guard, were absent from their excellent position on the first knoll of that crucial ridge, just as the first platoon of Marines struggled up the steep jungle slopes. Perhaps it was mealtime at the main Jap stronghold close by. Possibly they were lulled into a feeling of security by the approach of darkness. Probably they underestimated the speed of advance of the 2nd Battalion. From their high machine-gun emplacements and defiladed mortar positions, they could have stood off a regiment.

Making the most of the fortunes of war, the first platoon of Marines under Lieutenant Steve Cibik swept aside the few startled outposts just at dusk and occupied the well-dug foxholes of the enemy. Machine guns were thrown hastily into positions barely in time to meet the frantic rush of outraged Jap troops returning from their main strong points just east and below the ridge. The fighting which followed along this key ridge was called by correspondents the Battle of Cibik's Ridge. Actually the fighting on the ridge was the opening clash of the large scale battle to follow. The first high ground in Bougainville had been seized.

By nightfall of the 20th, the 3rd Battalion, after a day of mortar duels and heavy patrol clashes, occupied Jap positions along a low ridge northwest of the 2nd Battalion. Enemy forces facing the 3rd Battalion were withdrawing to the east toward Cibik's Ridge where Marines clung to their lonely salient across the main Jap line. It was now obvious

that a major engagement would occur east of the Piva Forks.

The 1st Battalion had moved up behind the 2nd Battalion and bivouacked on the bank of the Piva's West Branch. Tanks and heavy weapons lay in readiness on the Numa-Numa Trail. Engineers and Seabees labored to extend the road to the Piva, throwing hasty bridges across the deep stream beds behind the 2nd Battalion in the face of mortar fire. Supply sections strained to move huge quantities of ammunition, staging forward through the quagmire by truck, tractor, amphibians, and finally by carrying parties. A medical company set up near the head of the road to handle the streams of casualties.

ARTILLERY whined overhead with increasing tempo, seeking out targets in the enemy's rear and laying protective fire in front of the Marine lines. Dive bombers were busy raiding the Jap supply bases across the Torokina and attacking artillery installations.

The stage was set for the Battle of the Piva Forks.

Daylight came on the 21st of November, after one of those nights which veterans of the Solomons remember with a chill—a night spent huddled in the filth of a foxhole listening to the hideous sounds of the jungle, clutching knife and hand grenade, and waiting for the suicidal charge which never gets beyond the tapping, hollering, firecracker stage. All night the Japs could be heard chopping trees, sawing logs, digging to improve their bunkers. All night the Japs tried—sometimes successfully—to infiltrate the Marine lines. And all night the shells sighed through the trees in a lonely dirge.

Following the morning can of cold C-ration, the 2nd Battalion launched an attack on the right of the trail, with G and E Companies abreast. As the two assault companies waded the stream, crawled up the far bank, and moved on slowly at a crouching walk, snipers opened up from the trees. Little attention was paid the snipers. The only safety was in movement. Occasionally a fire team would spot the location of a sniper, and one of those rapid exchanges of shooting would take place which usually resulted in the elimination of the Jap.

As the attack moved out, the 1st Battalion, coming up from the rear, occupied the jumping-off positions of the 2nd Battalion and prepared to extend the lines to the left across the East-West Trail and tie in with the troops on Cibik's Ridge. Company A moved smoothly into the right flank, and C Company reached the lower slopes of the ridge on the left without difficulty. B Company, however, which had the task of closing the gap in the center directly across the trail, found itself forced to crawl through rifle and machine-gun fire. With dead Marines beginning to float in the Piva and in the stagnant pools of the swamp, the men clung to the banks of the stream unable to close the gap.

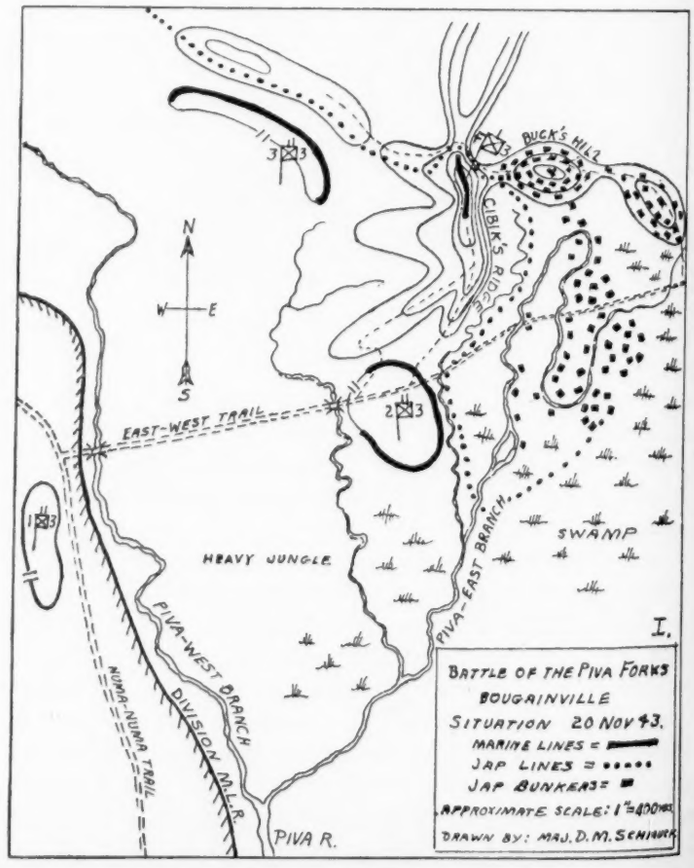
In the meantime, G and E Companies, fording the endless serpentine branches of the Piva, came under the coordinated machine-gun fire of heavy Jap bunkers. G Company, fighting doggedly, maneuvered to feel out the enemy, while E Company penetrated on the right in an effort to establish the Jap flank. The enemy positions were dug in on dry ground and surrounded by swamps and creeks. The bunkers were nearly invisible in the tangle of bamboo, and the Japs had cut their fire lanes cleverly by stripping the low branches from brush.

With a situation such as this, the pay-off is in blood and guts. In the bitter, close fighting which developed, a man's life rested in the hands of his squad leader. Under that leadership Marines fought and lived—or died. It was individual skill and courage which sent a man worming his way up to grenade range of a Jap position; but when hot steel fanned his cheek and flattened him in the mud, it was the support of his squad which enabled him to complete his job. A man wounded here was in a desperate plight—he could be reached only by men willing to face the same fire which had cut him down. Men wounded in the swamp or streams oftentimes drowned before help arrived.

The persistent Jap attacks striking B Company, in the center of the 1st Battalion, not only prevented the consolidation of that line, but menaced the flank and rear of the 2nd Battalion now fighting 300 yards to the right front. It was necessary, therefore, to commit the support elements of F Company not engaged in holding Cibik's Ridge.

F Company started its attack from the bottom of the ridge and left of the trail. Passing through the left platoon of B Company, the Marines penetrated the Jap flank and forced their way northeast for 300 yards, then cut south toward the trail. Almost immediately they came under the fire of a Jap strong point situated in a horseshoe loop of the Piva. While scouts held the attention of these positions, other Marines wormed their way to the edge of the East-West Trail. The enemy forces attacking the center of the 1st Battalion and harassing the rear of the 2nd Battalion were now completely flanked.

Just as the men of the flanking company were circling to



Cibik's Ridge—opening clash of the battle.

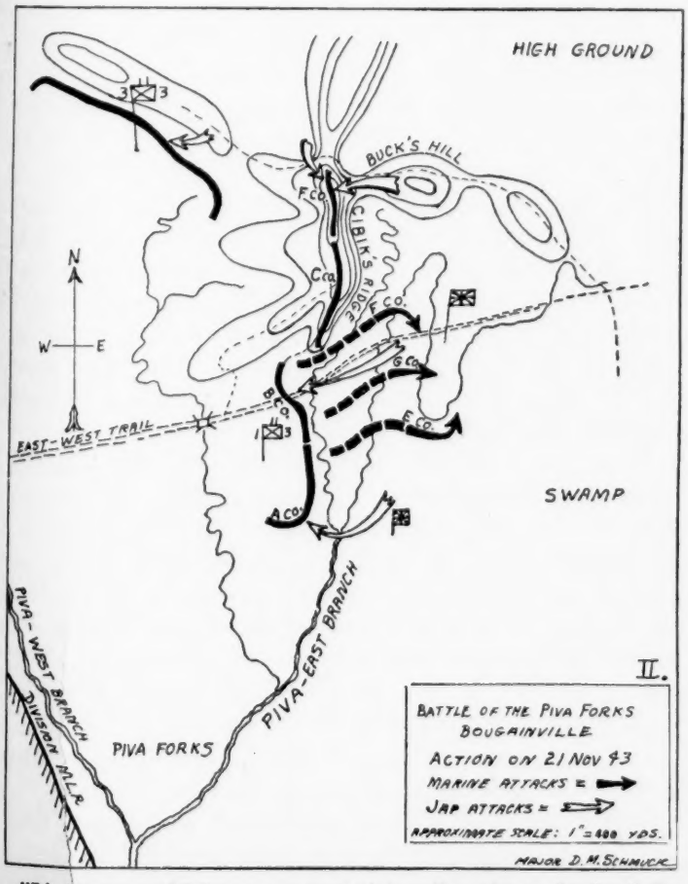
cut off the enemy, Marine tanks wallowed up from the rear and moved out along the trail behind B Company—still pinned down short of the river bank. Due to the danger of sniper bullets, the tank crews were operating with hatches secured. Trees were pushed over in all directions, and motors howled with the effort of pulling through the bog.

The Japs, hearing the commotion of the tanks and becoming alarmed by the fighting in their rear, suddenly decided to withdraw to the main positions where they had antitank weapons and flame throwers. Picking up their heavy machine guns and calling in their Nambu squads, the Nips stampeded back along the trail—to pass in review directly in front of the startled Marines of F Company. The slaughter was complete. Marines, crouching in the swamp firing BARs and light machine guns from the hip, did a thorough job. Some of the Japs escaping on the right side of the trail plunged into the midst of G Company and were chopped down. A wild barrage from the Jap positions tied everyone to the ground for some minutes.

The 1st Battalion now completed the main defense line, while the 2nd Battalion settled down to the nasty business of grenade tossing, name calling, and killing. In the dense jungle growth, coördinated movement was accomplished only through full use of the telephone—small radios being useless in such vegetation.

On the far left, the defenders of Cibik's Ridge came under repeated attack throughout the 21st of November. One attack succeeded in piercing the lines—to be broken up within grenade range of the command post. Attacks were launched against the handful of defenders from three directions. All were thrown back. Jap dead began to collect within the defenses on the ridge. The 60mm mortar section, located in captured Jap positions on the ridge, maintained a steady duel with knee mortars and 90mm's located in enemy strong points on spurs of the ridge. Carrying parties laboring to supply the ridge with ammunition suffered casualties along the trail.

Late in the afternoon, C Company closed the gap between F Company on the ridge and the regimental line, securing the routes of communication to the precarious salient. Artillery observers on the ridge could for the first time spot their targets visually.



"Little men of Nippon sprawled in piles along the bank."

ON the northern flank of the regimental front, the 3rd Battalion, moving to extend eastward toward the base of Cibik's Ridge, met resistance from enemy troops operating out of their strong points east of the ridge. The Jap line of communication ran through a saddle of the ridge, just north of the Marine defenses on that strategic height. By continuous attack on Cibik's Ridge, the Japs were successful in keeping that route open. The 3rd Battalion sector was marked all day by deafening mortar and artillery concentrations.

By late afternoon of the 21st, the 2nd Battalion had been brought up by a powerful wall of Japanese strong points consisting of mutually supporting groups of bunkers. The tanks had bogged down in the trail and could not be brought into action. With the enemy positions exactly located, the decision was made to withdraw the 2nd Battalion through the line consolidated by the 1st Battalion and to soften up the Jap defenses with artillery.

A withdrawal, at best, is difficult and dangerous action. It is doubly difficult when a unit is locked with the enemy in a jungle swamp. Platoons must first pull back their squads, some of which may have infiltrated behind enemy positions; the wounded must be removed and carried to the rear. Then the slow disengagement is made behind a covering screen which fights, if necessary, a rear-guard action. The dead are left behind.

As the 2nd Battalion passed through the lines of the 1st Battalion, the Japs attacked in a vain effort at double envelopment. Their column, attempting to flank the right of the Marine line, underestimated the length of that line and headed in squarely upon a half-dozen Leatherneck machine guns. The little men of Nippon sprawled in piles along the river bank.

The heavy odor of death hung over the malarial jungles as darkness settled on the Piva Forks. The thunderous roar of artillery edged in upon the line so closely that Marines in their holes flinched with each salvo. Jap shells, too, fluttered over—directed at targets in the rear.

On the 22nd of November, plans for the destruction of the enemy were formulated. To the north, the 3rd Battalion, Third Marines, was replaced in the line by the 2nd Raider Battalion, now attached to the regiment. The 3rd Battalion then moved into an assembly area near the East-West Trail, behind the 1st and 2nd Battalions. L Company, 3rd Raider Battalion, and a platoon of the Regimental Weapons Company, were sent to reënforce the Marines holding Cibik's Ridge.

The 22nd was a day which strained the physical endurance of battle-weary Marines—and cracked the mental endurance of some. It was a day of fierce patrol action and

artillery registrations. It was the day the Jap 75mm artillery, known as 77s, got the range on Marine positions.

On the right flank, the enemy ignored lessons of the previous day and drove in, to be met by the deep-throated roar of Brownings. One tow-headed, grimy-faced Marine corporal swinging a heavy, steaming machine gun piled up a gory stack of Nips—"thirty or forty, not counting the pieces," according to his buddies. It became necessary for G Company to move into the thinning line of the 1st Battalion.

To the left, on Cibik's Ridge, the Marines finally occupied the saddle itself and severed the main route between the Jap headquarters and troops operating on the northern flank. The situation was now ideal for the use of light mortars in one of the most outstanding cases of mortar action on record.

The 60mm mortar section of Company F was headed by a grizzled sergeant named Henzi. To Sergeant Henzi fell the pleasure of discovering that he faced the mortarman's dream. On a lower ridge, jutting out from the main ridge, was a formidable group of enemy strong points. Completely masked from artillery fire, these positions swarmed with Japs. Patrols discovered the first and largest of these installations on a knoll directly below the Marine defenses on the ridge. Row after row of log bunkers with connecting trenches and rifle pits ringed the hill. The Japs felt so secure in their fortress that they chattered loudly and drank Dai Nippon beer at all hours. This bristling nest was dubbed Buck's Hill, as a reference to the company commander's evil interest in all Jap activities in that area.

HENZI, trailing a telephone wire from his mortars, crawled out from the lowest Marine position which covered the connecting ridge to the enemy stronghold. Below he could see where his shells had flattened the brush and knocked out a 90mm mortar on the day before. He wriggled still closer—until he looked out upon Buck's Hill itself, not fifty yards away. Mentally figuring from the data of his previous concentrations, the lone marine whispered corrections into his phone. He lay still, waiting patiently until the increased activity below indicated mealtime—then his command reached his mortars: "Give 'em hell!"

Over thirty rounds of 60mm shells were in the air before the first explosion rocked the Jap camp. More than ninety rounds of high explosives poured on Buck's Hill. Caught completely unawares by the lethal hail, the enemy suffered frightful destruction. The tired Marines found time to gloat: "Even old Diamond couldn't beat that!"

Jap prisoners captured later expressed great interest in the automatic mortars which fired like machine guns.

Patrols and developments on the 22nd of November brought the conviction that the enemy was organized in greater strength than originally thought. It was decided, therefore, to give an additional day to reconnaissance and preparation before launching the regiment in an all-out attack. Time was needed to improve the roads and catch up on the tremendous expenditures of ammunition. Telephone lines torn by tanks and amphibians and blasted by Jap artillery required replacement and constant maintenance. Heavy mortars were moved to Cibik's Ridge to concentrate on the left flank string of enemy strong points starting with Buck's Hill. To the Leatherneck, food for his belly and oil for his rifle were the most important considerations—and their supply became a desperate problem.

The 23rd was a day of feverish activity in the rear. Plans for the attack were crystallized. The 3rd Battalion moved into position behind the left flank. All was in readiness.

To the battered Marines in the front lines, however, the day was just another nightmare of patrols and snipers—of cursing the mortars and the hated 77s. Tension and the smell of death are poor foxhole companions for a weary man. So is hunger. There is a limit to how long a young fighter can remain in action on two meager rations daily.

The main action of the day centered again below Cibik's Ridge. In order to complete plans for the assault, it was necessary to determine more fully the strength and disposition of the enemy forces facing the left half of the proposed line of attack. Accordingly, F Company, now relieved by L Company of the Raiders, was directed to initiate a strike against Buck's Hill. The assigned mission was to occupy the hill if artillery and mortars had proved effective in weakening the enemy hold. If heavy resistance was met, they were to cause as much destruction as possible, then move south in front of the main ridge and pass back through the lines to the 2nd Battalion assembly area.

Following a mortar preparation, Marines—the same who had originally seized Cibik's Ridge—moved stealthily down the forward slope of the ridge and worked out along the corridor to Buck's Hill. The devastation caused by their mortars made the cover thin and broken.

First blood was drawn by the enemy: from platforms hidden in banyan trees came the wild song of the Nambu. The Japs had waited until the screen of scouts had passed before opening fire. Marines immediately began dodging forward to build up on the scouts. Far from abandoning his stronghold, the Nip was very much in evidence. All hell broke loose! From the maze of bunkers, machine guns poured a withering cross fire upon the attackers. Jap rifles spit from tiny holes between the roots of trees, to be answered by the roar of M1s.

The jungle shook with the bedlam of grenades and automatic weapons. It was an ugly, close-quarter struggle. Completion of the assigned mission—either way—became a matter of doubt. The best the Marines could hope to do was to tear the place up and get out. Tearing it up they were doing—getting out was less easy. On the face of the ridge opposite the hill, any careless move brought a burst of bullets. The wily Jap fought to close his trap.

There was only one way to ensure the withdrawal of Marines on Buck's Hill—counterattack. This was done by light machine-gun squads inching to positions above the connecting ridge and raking the bunkers and trees on the Jap hill with a steady stream of fire just above the heads of the fighters. This so disconcerted the enemy that the forward elements were able to rejoin their platoon and form a firing line to keep the enemy occupied while men crawled back to carry out the wounded.

One six-foot private—a red head named Skinner, with a perpetual grin—remained in the thick of the fight. His smoking BAR had covered his platoon's withdrawal; from his lone position among the Japs, he covered the removal of the wounded; then, still shooting, he covered his own rescue.

All this with a bullet through the head and another through his thigh. He was a Marine.

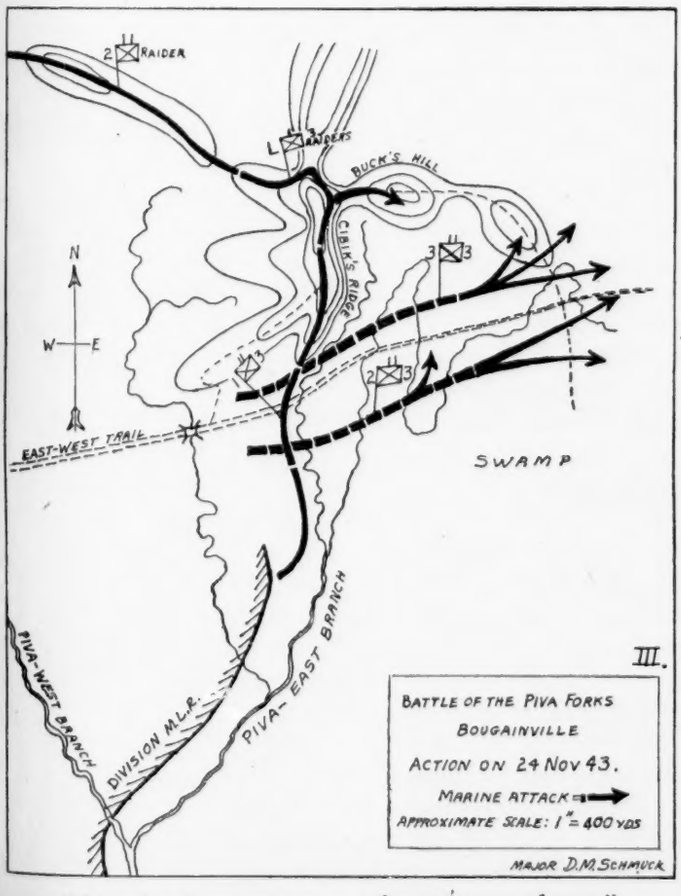
The remainder of the mission was then completed, and the Raiders moved down to dig in on the lower positions commanding the Jap hill. It was evident from this reconnaissance in force that a supreme effort would be required to dislodge the Nip from the Piva Forks.

Late on the 23rd, battle orders were issued—the zero hour was set. The plan of attack was simple: Following an artillery preparation by the 12th Marines, the 3rd Marines would attack, two battalions abreast—the 2nd Battalion on the right, the 3rd Battalion on the left, with the East-West Trail as the center line. The Raiders would attack Buck's Hill. The 9th and 21st Marines would expand the division line behind the spearhead, and the paratroopers would stand ready to move on order.

Each Marine received his orders. They were detailed, but their meaning was simple: *Attack! Attack until the enemy was destroyed.*

At dawn of the 24th of November, the troops betrayed their exaggerated calmness to make nervous, last-minute adjustments of their weapons. Cold rations were methodically forced down. Troop leaders slipped from foxhole to foxhole with the last word—a slap on the shoulder here and there, a cheerful grin. They were ready.

Promptly at 0830, the jungles of the Piva Forks shuddered and then blew apart in a blast of sound and flame which defies description. Firing the greatest concentration in the history of the Marine Corps, seven battalions of artillery, 75mm, 105mm, and 155mm, shooting every battery, every gun, opened up simultaneously on an area target 800 yards square. The distant rumble of the guns came to the waiting Marines as a steady roar; but the incomprehensible sound from the impact area—just a hundred yards in front of the lines—struck in a wave of concussion which broke eardrums and caved in foxholes.



"Out of such moments . . . the greatness of men."

In twenty-five earth-shaking minutes, 5600 rounds of high explosives were poured into one small area; then the barrage lifted to distant targets. The massed fire of heavy and light mortars now traversed the front so close to the lines that leaves and branches showered down upon the Marines, and shell fragments filled the air. To this was added the cacophony of forty-four machine guns sweeping the front with a wall of hot steel.

NEAR H-hour, the 2nd and 3rd Battalions moved groggily to the line of departure—there to be caught by the first blast of the Japanese artillery fire. Salvo after salvo tore into the Marines of the 1st and 2nd Battalions for ten terrible minutes—then died to an occasional round as Marine counterbattery whistled overhead. At the moment of assault, troop leaders were faced with sickening losses. On all sides Marines lay dead and wounded, or writhing from blast and concussion. Ability to attack seemed doubtful.

Out of such moments is born the greatness of men—and the spirit which underlies the fierce pride of our Corps. In the smoke and desolation of Bougainville, Marines turned to their leaders and found them strong; and at the signal, they attacked, closing the gaps of the fallen.

With G and E Companies leading on the right, L and I Companies on the left, and flame throwers well forward, the assault battalions crossed the line of departure at 0900 and moved into a region of utter devastation. Except for a few erratic snipers, death and silence greeted the troops.

A long column of tanks and amphibious tractors carrying 37mm guns moved behind the battalions. Bulldozers, on the heels of the attacking units, were tearing at the banks of the Piva to build an approach for the bridge that engineers labored to throw across the swampy river.

For 500 yards the Marines moved in a macabre world of splintered trees and burned-out brush. The very earth was a churned mass of mud and human bodies. The filthy, stinking streams were cesspools of blasted corpses. Over all hung a stench of decaying flesh and powder smoke which revolted even the toughest.

The first line of Jap strong points, with their grisly occupants, was over-run and the 500-yard phase line reached. Every unit immediately tied in by telephone to report on contact between companies, and to discuss the situation and the next move. A forward aid station set up in one of the enemy strongholds behind the 2nd Battalion.

After a short pause for reorganization, the attack was resumed. This time, however, the crackle of rifle fire met the advancing troops and grew in volume, particularly on the left flank. To the left rear, fighting broke out suddenly on Buck's Hill. Then, with the peculiarly frightful sound of approaching artillery, Jap 77s again battered the regiment from the front to the rear and back again. Marines burrowed for cover as 75s and 105s replied in kind. Under cover of the noise and confusion, Nambus stuttered from the trees. It required a brave man to press on when the deadly Nambu kicked dirt in his face with every move.

AS the Nip artillery was silenced, the fighting grew in violence. The 3rd Battalion was faced with a lower extension of Buck's Hill—a long curving knoll matted with jungle and honey-combed with enemy bunkers. Contact across the front became a vicious melee as the Japs tried desperately to smash the attack.

L Company fought its way slowly forward to the knoll, crawling from cover to cover in a bloody, close-quarter struggle. One after the other, every officer of L Company was killed or wounded as the company hurled itself repeatedly upon the enemy; but the fight continued on until I Company, on the right, finally forced its way over the end of the knoll and beyond. K Company, coming from behind, then passed through the right platoon of L Company and established a line with I Company. L Company, leaderless and close to exhaustion, clung to its position at the base of the knoll.

With the knoll flanked, and with Buck's Hill to the west overrun by Raiders, the surviving Jap defenders of the knoll fell back into the swamp. The 3rd Battalion now built its line up to the 2nd Battalion, and the regiment pushed forward until a thousand yards of battle-torn jungle lay between the spearhead and the line of departure.

Although the main Japanese positions were now in the hands of the Marines, and the enemy's efforts had been reduced to disorganized pockets of resistance, the situation of the regiment at dusk of the 24th was critical. Enemy troops driven from Buck's Hill, and finding themselves blocked by the progress of the regiment to the east, infiltrated the dense swamp behind the assault units and successfully cut off the 3rd Battalion from direct contact to the rear. Carrying parties and runners were ambushed along the trail, and communications were destroyed. It became necessary for all traffic to the 3rd Battalion to be routed through the 2nd Battalion along a trail swept frequently by bullets from several directions—including the trees above.

The East-West Trail was choked by streams of amphibians splashing forward through the mud, carrying ammunition and barbed wire and returning to the rear loaded with casualties. Wreckage and stalled vehicles lined the way.

No vehicle could get closer than 700 yards to the front—from there manpower took over. At no time was there a shortage of volunteer labor—every man was eager to help. Bandsmen, clerks, and cooks swarmed behind the lines to accomplish a miracle of evacuation and supply. Stretcher bearers, struggling through waist-deep slime with their helpless burdens, were subjected to a gauntlet of sniper bullets. Communication crews worked continuously to restore vital telephone lines ripped out by artillery and mortars.

By dark the regiment had closed its flanks and rear as well as the strength of the companies would permit, and was prepared to fight off the counterattack expected during the night. Although numb with exhaustion, every man in the thin line stayed awake throughout that long night. The 24th of November was Thanksgiving Day—each Leatherneck crouching there in the wet mud that night knew he had something to be thankful for; he was alive, and there was no night attack.

On the 25th, all enemy resistance ended. The valley from the Piva to the Torokina was won, and the commanding ground controlling the Piva Bomber Strip was occupied by Marines. The Japanese 23rd Reinforced Infantry, leaving 1107 dead on the field of battle, was destroyed.

On the 27th of November, the division lines expanded to include the spearhead, and the ragged 3rd Marines were relieved by fresh troops. Dazed and smelling of death, the returning fighters were met with new clothes and hot chow at their rear assembly areas. Silently the bearded Marines washed the filth from their bodies; then, almost reverently, they ate their first hot meal in twenty-seven days.

The Battle of the Piva Forks was history.

COMPANY COMMANDERS

The Third Marines in the Battle of Piva Forks

Co. A—Major Clifford F. Quilici, USMC
Co. B—Captain Donald L. Weiler, USMCR
Co. C—Captain Frank H. Vogel, Jr., USMCR
Co. D—Major Maynard C. Conner, USMCR
Co. E—Captain George W. Coupe, Jr., USMCR
Co. F—Major Donald M. Schmuck, USMC
Co. G—Captain Robert M. Simpson, USMCR
Co. H—Major Samuel W. Smith, Jr., USMC
Co. I—Major George A. Frost, USMC
Co. K—Captain Paul T. Torian, USMC
Co. L—Captain John Kovacs, USMC
Co. M—Major Wade M. Jackson, USMC
Regimental Weapons—Major Richard Moss, USMC

Parachute Brakes

ONLY slightly at variance with crack-pot inventions which have been showering upon aviation for forty years, the crew of a B-24 recently made a landing at a fighter strip at Tarawa by throwing out their parachutes to form enough wind drag to stop the big plane. With their brakes destroyed in a ninety-mile battle with thirty Japanese planes, these 7th Air Force boys cut their landing speed approximately forty miles an hour, and further aided by a dragging ball turret, the B-24 rolled to a stop just as it reached the end of the runway.

The plane was prepared for the landing by a parachute attached to each of the waist gun mounts and a third one laced to the fuselage bracings in the tail. Just as the wheels touched the surface of the landing strip the parachutes were released. They billowed out almost simultaneously and the bomber rolled to a stop.
—*Air Force,* May, 1944.

THE MARINE CORPS

An Essential, Integral Element of the Naval Service

By Lieutenant General A. A. Vandegrift, USMC

A statement made by the Commandant of The Marine Corps to the House Select Committee on Postwar Policy, May 11, 1944

MR. CHAIRMAN, the Marine Corps appreciates this opportunity to present to your Committee its views regarding the place of the Corps in the armed services of the United States. As we understand it, the problem now under consideration is to determine what system of organization of all the armed services will ensure the most efficient employment of the country's military resources in peace and in war. Our Corps, as a component of the Naval Service, has had over one hundred and sixty-eight years' experience with the principle of unity of command. It has learned the absolute necessity for the efficient control of well-balanced, thoroughly integrated, teams in the operations of war and in the accomplishment of essential peacetime tasks.

In the employment of modern military forces, there are certain general types of frequently performed major tasks which appear to indicate the best basis for permanent integration of the higher echelons of organization. One of the most important and distinctive of those basic tasks is that of projecting sea power, on, above and under the surface, against sea and land objectives. That task can be accomplished only by naval operations, both on the offensive and in protection of our coastal areas, overseas bases, and sea lines of communication. Lessons learned from such operations in this war have strongly confirmed past experience as to the organization which will guarantee their being conducted most efficiently. For that purpose we require a permanent combination of sea and air elements, with an integral, subordinate land-air force. Our naval service, as at present organized, provides the needed sea-air combination, with the Marine Corps as its required integral, subordinate land-air force. That force is needed to ensure, on call, the seizure or defense of advance bases for the sea-air combination, and their denial to the enemy.

"Amphibious operations are highly specialized."

The present status of the Marine Corps is the result of development growing out of long experience in war and peace. The parallel development of similar foreign forces indicates, by cumulative weight of evidence, the necessity for complete administrative as well as tactical control of this essential integral element by the Navy. Beginning with ancient Greeks, sea-going soldiers, specially trained and equipped, have been employed in naval operations. Among modern foreign navies, the two largest, England's and Japan's have similar organizations, as has the efficient navy of our ally, Holland.

Great Britain, under the Stuart kings, had need of such a force in its sea arm, and embarked an Army regiment. In the reign of Charles the Second, inefficiency, caused by conflicts of interest between Army and Navy, made it advisable to organize an integral subordinate land force under the Navy. The Royal Marines were then founded, with the title of "The Admiral's Regiment." Holland's use of ordinary troops at sea in the First English War (1652-54), proved that putting a soldier on shipboard does not make him a Marine. On the advice of Admiral de Ruyter, the existing Army complement with the Dutch fleet was replaced in 1665 by a newly organized regiment, trained as Marines and assigned as a permanent element of the Navy. That corps has been retained to this day. Personnel of the Royal Netherlands Marines are now serving and training with us and attending our Marine Officers Schools. Japan became of age as a world power without a Marine Corps, but after encountering difficulties of coördination in operations around Shanghai, in the early nineteen-thirties, found it desirable to organize, as an integral element of her Fleet, the Special Naval Landing Parties, often referred

to as the Imperial Japanese Marines, for use in swift amphibious movement and advance base defense. From forces of that organization we have met the toughest opposition of the Pacific War, including the defense of Tarawa.

The establishment of our own Corps in 1775 as part of the Navy grew out of British experience, and of the prior organization of bodies of colonial Marines in the French and Indian War. We continued to exist as a separate Corps even when the Navy as a whole was under the administration of the War Department. In 1867, in the period of reduction of the services after the Civil War, an attempt was made to abolish our Corps as a distinct branch, and transfer it to the Army. This brought forth such a storm of protest from the highest and most experienced officers of the Navy, and so much evidence of its usefulness and efficiency, that the Committee on Naval Affairs recommended, after thorough investigation, that the Marine Corps not only should not be abolished, but that its organization as a separate Corps should be preserved and strengthened. These historical precedents show that any reorganization which requires the functions of the Marine Corps to be performed other than by an integral part of the naval service, would not be a step in advance, but a setting back of the clock of progress.

OUR status, like that of similar foreign corps, results from the facts that our functions are highly specialized, and of a distinctly "sea-going" nature. The most distinctive of those functions is participation in amphibious operations as an integral part of the Fleet. Those operations, projected beyond the continental limits, require overwater movement and subsequent landing. Such a movement involves combatant ships and aircraft for escort and to furnish fire support, transports for carrying troops, boats to land them and the troops who are to do the fighting ashore. Time required for training troops is variable. Time for providing combatant and other vessels required in amphibious operations is a matter of years. The element over which troops proceed from our shores to an enemy-held area is water, the element of the Navy. It is for these reasons that the Navy has the major responsibility in the conduct of amphibious operations. In line with this responsibility, the Navy has established in each of its fleets an amphibious force.

The ground force element of the permanent naval amphibious force organization consists of the Fleet Marine Force which includes land and air units. The Marine Corps is an integral part of the Navy and the Fleet Marine Force is an integral part of fleet organization just as much as are the battleships, cruisers, destroyers, combat transports, and landing craft which are necessary for the conduct of amphibious operations.

THE Navy in time of peace has always been maintained at a high state of readiness in order that it may start operations immediately upon the beginning of war. Likewise has the ground force element of the Navy, the Fleet Marine Force, been kept at a high state of readiness for immediate operations with the fleet. Since the First World War, the Marine Corps constantly added to the knowledge of amphibious warfare through study and discussion in its schools, and by the maneuvers of the Fleet Marine Force. It developed, with the coöperation of the Navy, almost the entire body of doctrine, the tactical methods, staff procedures and special equipment, employed so successfully by American forces in amphibious operations in this war.

The importance of swift action in the seizure of advance bases was demonstrated in this war by the Japanese seizure of Hong Kong, Singapore, Rabaul, the Andaman Islands and the Dutch East Indies. Most of this was accomplished in a matter of weeks. Their victories were accomplished or spearheaded by an unbelievably small number of Special Naval Landing Parties—the Japanese Marines—which are an integral part of their navy.

Prompt availability for overseas operations and speed of employment therein, are characteristics of a Marine Corps integrally a part of its Navy. This applies not only to major warfare but to minor expeditions, such as have frequently occurred in the past. Lives and money were often saved, both to the United States and to the countries assisted, by the prompt availability of a subordinate naval land element. The initial American occupation of Iceland, in the summer of 1941, provides the latest example. The required force of Marines was assembled, equipped and transported in a very short time. No delay was caused by interservice consultation nor by the submission of differences of opinion for solution by higher authority. The Navy issued the orders, and the Marines went to Iceland. It was as simple and effective as that.

On the thirtieth day after Pearl Harbor our first sea-air combination, with an already trained element of Marines, moved out in force to the Samoan Islands to hold them in defense of our vital supply lines to the South Pacific, and to advance further toward the enemy if the situation required such action. How long would it have been before they could sail if a land element had to be attached and trained? That the first American offensive by ground forces in this war was the landing of our First Marine Division at Guadalcanal is further confirmation of the readiness for amphibious action of the Navy's ground-air element.

IN August, 1942, a naval task force attacked Guadalcanal and Tulagi. The ground forces in the initial landing were elements of the Fleet Marine Force. You know that Guadalcanal was the furthest advance in the Japanese move to cut out sea lanes to Australia and New Zealand. It may be too early to say that Guadalcanal was the turning point in the war. I can assure you that if there had been no Fleet Marine Force as part of the Navy, the Guadalcanal operation could not have been undertaken at that time, and the Japanese advance would not have been stopped there. The Marines who landed at Guadalcanal were part of the Navy; they had been trained and especially organized and equipped for landing operations.

As the war developed, the need for amphibious troops became greater and greater in order that we might project our operations overseas, rather than to fight a defensive battle on our own shores. The Marine Corps was expanded to many times its original size. To date, every Marine Division that has completed its training, and most of our trained defense battalions, have already engaged in combat

with the enemy. I know of no other military organization which has had such a high percentage of its combat units engaged in active operations.

To meet promptly all calls to move by sea, ready to support any operation planned by the Navy, the Marine Corps is so composed that its combat units are entirely self-contained, and its air element is an integral part of the Corps. The primary mission of Marine Corps Aviation is to provide direct aerial support for the ground forces of the Corps in all types of operations. To accomplish that primary mission, it has been organized, equipped and trained to operate effectively from either land bases or carriers.

ONE of the most important factors in the successful conduct of amphibious operations, is the preliminary joint training of the landing troops with the Aviation units furnishing their close air support. No landing operation can be wholly successful unless an ample period of such prior training can be conducted. By using either carrier or land-based Marine Aviation to support Marines in landing operations, it is possible:

First—to have a more efficient air-ground team.

Second—to have a preliminary training phase for the aviation and ground forces involved while the air units are shore-based, thus permitting carriers manned by Naval Carrier Groups to be employed for longer periods on strictly naval missions.

The record of Marine Aviation in the Pacific, in terms of destruction visited on the enemy, has amply demonstrated its value as an integral element of the Corps. Combat experience there has demonstrated the necessity for adequate close air support of Marine Ground units in amphibious landings, and in the exploitation and defensive operations which follow. Advanced training of Marine aircraft squadrons particularly fits them for that task. The effectiveness of Marine Aviation can be judged by the results obtained at Guadalcanal where, during the period of consolidation, Marine Aviation furnished air support. Also later, at Munda and at Bougainville, Marine Aviation furnished close support during the landing, as well as during the subsequent consolidation.

The integration of Marine Aviation with Naval Aviation is equally valuable. As a part of Naval Aviation, it is well prepared to perform its supplementary mission of participation in other types of Fleet Air action, when and where the situation requires. Marine air units are now in training to operate from carriers. As carriers become available, they will be able to fly from them in close support of Marine landing forces, as well as to participate in other Fleet operations when such close support of units of their own Corps is not required. Far from duplicating the efforts of Naval Air Forces, such action by Marine Aviation is a valuable supplement, along parallel lines.

WHILE Marine Aviators are trained in sea search operations and operations from carriers, and can participate in naval missions, the Navy's carrier-based flyers often furnish support of the landing Marines by air reconnaissance, bombardment of ground installations, strafing and the laying of smoke screens. The Tarawa and Kwajalein landings recently demonstrated this close naval air support, without which the operations would have been unsuccessful. By so ensuring the employment of both Navy and Marine air units on all types of operations, within the capabilities of their aircraft, we provide an excellent example of that Principle of War usually referred to as "Economy of Force."

In addition to the Fleet Marine Force, as an integral land-air element of the Fleet, it is necessary to employ forces to provide internal security for Navy yards and other shore establishments, wherever located, as well as aboard the larger combatant ships of the Navy. As all of these functions must be performed, there can be no *unnecessary duplication* in their performance by an organization specially organized, trained and indoctrinated for that purpose. It may be that some other organization could be employed, but the past experience of the Marine Corps, and its constant association with the Navy, ensure the utmost efficiency in performance, as well as providing the essential complete naval control over the personnel so employed.

In this war, some selected Army divisions have been given amphibious training, as there were not enough Marine divisions to spearhead all landings of our Army for large-scale operations against enemy land forces. Their landings differed from those of Marines employed in naval operations. They were only the initial movements of a large land campaign, or of a new phase of such a campaign, and so a transient incident in their whole combat effort. However, in proportion to the short time involved in their amphibious employment, they required considerable special training in the performance of tasks unrelated to their normal modes of action.

AMPHIBIOUS operations are highly specialized. Amid all the other requirements for employment of the peacetime forces, under conditions of shortage of funds and personnel, only a specialized organization, closely integrated with the Navy, can be expected to continue efficient training and development in that type of operations after the war. In time of peace, the Fleet Marine Force would continue to be a laboratory for field tests of new equipment and for development of ideas on amphibious tactics, technique, and material. In the event of another war requiring early employment of amphibious forces, the necessary striking force would be at hand, organized, equipped, and trained.

We should carefully distinguish between duplication of effort and parallel employment. A Marine unit, with its own guns, or storerooms, or supply of shoes, across the street from a unit of another service with similar equipment, is not an example of duplication. Duplication would exist only if the totals of both installations were beyond the essential requirements of both organizations.

Any suggested change of organization which would alter the status of the Marine Corps as an integral element of the Naval Service, must meet these tests:

a. Will greater efficiency result?

b. Will the cost to the government be less?

In time of peace, the American public measures military economy on a dollars per man basis. In war, they measure it purely on a basis of comparative results. In both respects. I believe the record of The Marine Corps is most favorable.

If only because they promote both efficiency and econ-

omy, I believe that the elements of tradition and *esprit de corps* should be considered. During over one hundred and sixty-eight years, our Corps has built up an *esprit de corps*, based on its splendid traditions as a combat service, which makes the United States Marine unexcelled as a fighting man anywhere in the world. That *esprit*, and those traditions, have been passed on to nearly half a million Marines during this war, and through them to a large segment of our people. There has been ample demonstration that we have held the esteem of the American public for over a century and a half. We can envision no gain to our country's readiness for war in any reorganization which would discard a tradition and an *esprit* as old as our nation, and which have become inspiring parts of our heritage.

The war undoubtedly still holds many more lessons for us. Certainly, at this time, we can see no evidence that so much of this war as has been conducted by our Navy indicates any urgent necessity for a drastic change in over-all organization of our armed forces. Lack of coördination between land and air forces, such as the failure of air support in the allied defense of Crete, should be critically analyzed. Such study, together with other pertient facts, may indicate that we are on the wrong track if we set up an over-all organization, whether under one or more cabinet departments, in which the primary division of the several services, in their highest echelons, is on the basis of separate air, separate sea, and separate ground forces. That solution, however plausible at first sight, may be an oversimplification of our problem, and eventually lead to the very duplication, overlapping of authority and conflicts of interest which we hope to avoid.

With the entire record of this war available to us after its termination, we should study and plan, we should clarify obscure incidents, and we should keep our minds open in the interim, to ensure the best organization when we adopt it. Otherwise, we may adopt one prematurely that would later appear less desirable, when all the facts are at hand as a basis of judgment. By opening up and continuing discussion of these matters, we believe this Committee is performing an invaluable service in collecting data, directing attention to the problems involved, and ensuring careful scrutiny of all the questions at issue in their solution.

Historic Defense of the Corps

OVER one hundred and twenty-five years ago, the Commandant of the Marine Corps had to fight to retain the strength of the Corps at one thousand men plus commissioned officers. At the request of Secretary of the Navy B. W. Crowninshield, the Commandant, Lieutenant Colonel Franklin Wharton, gathered together data showing the essential duties and responsibilities of the Corps. This information Secretary Crowninshield dispatched to the Honorable James Pleasants, Chairman of the Naval Committee of the House of Representatives. A copy of this historic document, printed in 1816, is on file in the Historical Division, Headquarters, U. S. Marine Corps. Secretary Crowninshield's letter of transmittal is reprinted below:

Navy Department, April 11, 1816.

Sir,

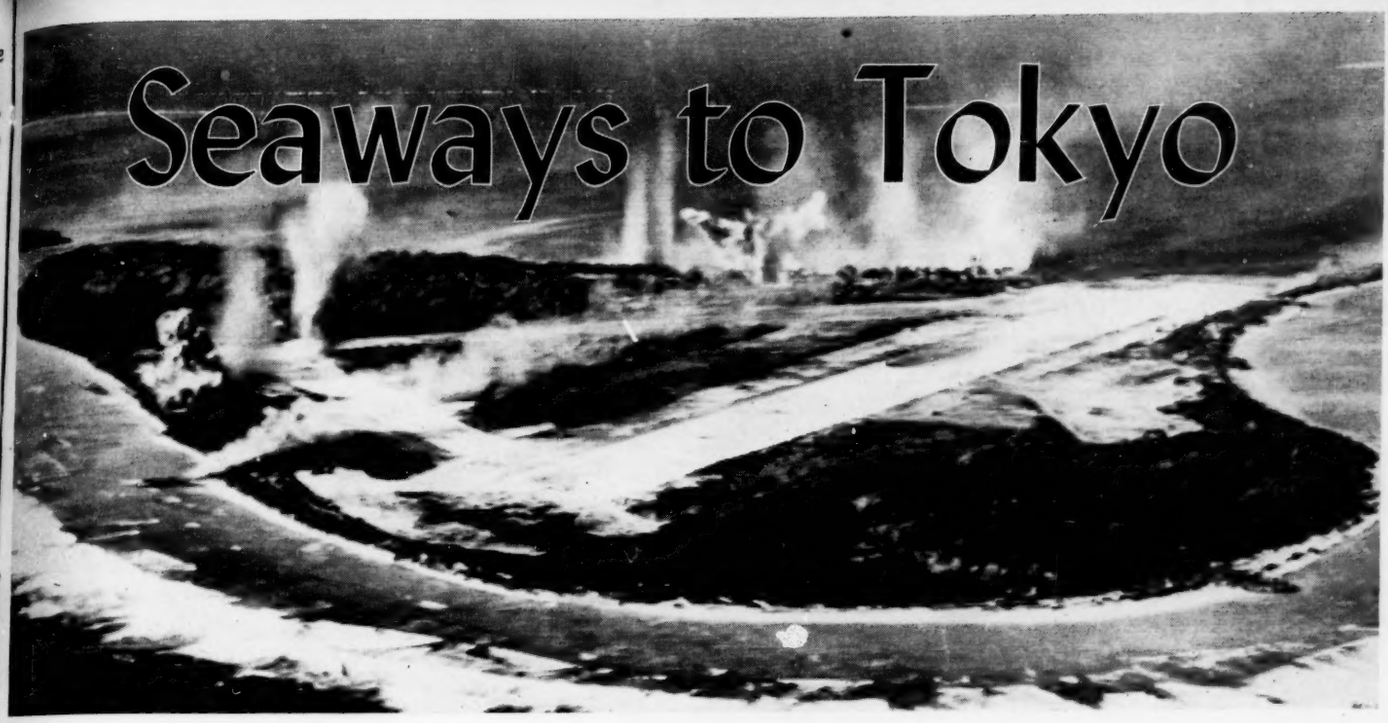
In compliance with the request of the committee of the House upon Naval Affairs, communicated by your letter of the 4th instant, enclosing a resolution of the House of Representatives, I have the honour to state, for the information of the committee, that the number of officers, non-commissioned officers, musicians, and privates, proper to be retained in the marine corps, upon a peace establishment, ought not, under existing circumstances, to be less than one thousand men, exclusive of commissioned officers, the number to which the corps was reduced in January last, in pursuance of the order of this department, copy of which, marked A, is enclosed.

It will be perceived, by an inspection of the representations recently made by Lieutenant Colonel Franklin Wharton, the commandant of the corps, of which copies are herewith transmitted, that to supply the wants of the service, and give effectual protection to the public property at the various depots, it would be impolitic, at the present time, to recommend a further diminution: and as the number of commissioned officers is not disproportioned to the strength of the corps, and as resignations frequently occur, it is not considered necessary to suggest any reduction in the number of the officers.

I have the honour to be,
With the highest respect,
Sir,
Yours most obedient servant,
B. W. CROWNINSHIELD.

Hon. James Pleasants, jun.
Chairman of the Naval Committee
Of the House of Representatives.

Seaways to Tokyo



Woleai's center airstrip was rendered useless on March 30.

By Captain Clifford P. Morehouse, USMCR

In The Marine Corps Gazette *for May, 1944, under the title "American Micronesia," the author discussed the importance of the Japanese mandated islands to the future of the United States. The conquest of these, begun with the invasion of the Marshall Islands by combined Marine, Army, and Navy forces, is being continued by air and sea raids on key island groups. Some indication of what our landing forces may find on the Pacific islands from Truk to Tokyo is given in this article.*

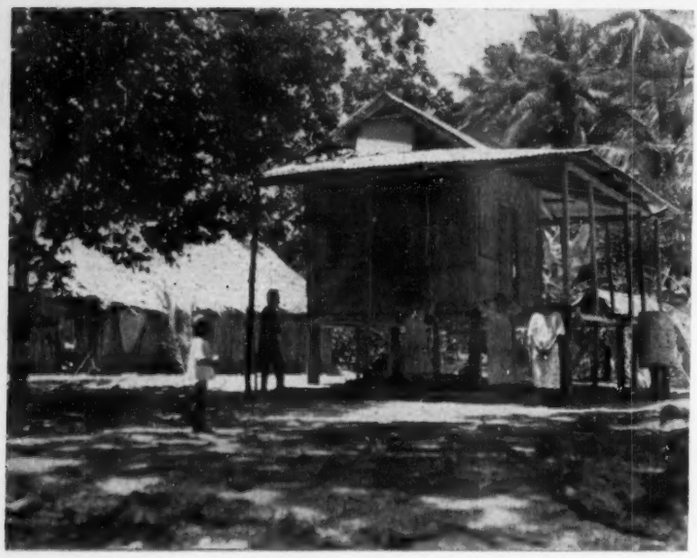
SINCE the raid on February 16th and 17th Truk has had few secrets that are not pretty well known by American naval authorities. Since that time frequent air raids by land-based planes have kept this once proud Japanese fortress in a constant state of alert. This continual pounding and surveillance have made Truk virtually useless to the Japs as a naval base and it will become increasingly difficult for the enemy to supply his forces there.

The strongest point in the Truk atoll is Dublon island, on which is located the administrative headquarters. Dublon town on the south side of that island was the home of the governor and headquarters for the Truk department of the Nanyo government. The town itself is of a considerable size and Willard Price found it teeming with activity on his visit there in 1935. The only other town of any considerable size in the Truk atoll is Hanamachi on Moen island, northwest of Dublon.

The Japanese have had a long time to build up Truk and to indoctrinate the natives. The Japs seized the German Caroline island possessions in October, 1914 during World War I. They had been a German possession since 1899 when Spain, its Pacific Empire broken by the American seizure of the Philippines, sold the islands to Germany. While the Germans held the Caroline Islands they developed them, opening Truk and the other islands in the group to world commerce and marketing their limited products of copra, pearl, turtle shell and sea cucumbers. Both German and American missionaries built churches and schools, translated the Bible and converted most of the islanders to Christianity.

With the Japanese occupation, all this was changed. While the missionaries were permitted to continue under control, a new Japanese culture was introduced and the islands were closed to visitors and to trade, except with Japan. The native palm thatched huts began to be replaced with wooden houses set on pilings with iron roofs and tanks to catch rain water. Large sums of money were spent to develop the islands. Much of this development was undoubtedly done as a part of a long-range program to build Truk and the Carolines into a formidable series of naval bases. Many airfields were built and strong installations of coast artillery and antiaircraft were installed.

The American seizure of the Gilbert and Marshall islands to the east and of bases in New Guinea and the Solomon and Admiralty Islands to the south rendered the Carolines vulnerable to attack by air and sea. In a



The natives of Truk and other Micronesian Islands are encouraged by their Japanese masters to build this type of house, more sanitary but less picturesque than their traditional dwellings. Made of wood, the new house has a sheet iron roof, floor raised high from the ground, and a tank in which rain water from the roof can be collected. Photo courtesy of Willard Price and the National Geographic Society.

bold move by a strong Navy task force hundreds of carrier-based fighters, bombers and torpedo planes struck at the heart of Truk, February 16th and 17th, sinking 23 Jap ships with six others listed as probably sunk and eleven damaged. However, the carriers and battleships that had been found in the Truk lagoon by Marine reconnaissance planes February 4th had fled. Only one American ship was damaged in the attack. Thus it is clear that Truk is no longer the formidable enemy base that it had been; nevertheless it is still a considerable obstacle in the northward and westward progress of American invasion forces.

From Truk there extend two mainline seaways, one west through Yap and Palau to the Philippines; one northwest through the Marianas and Bonins to Japan itself. On the westward route the principal way stations between Truk and the Philippines are Woleai, Yap, and Palau. All of these were honored with a destructive visit by one of the largest U. S. Navy task forces ever assembled on March 29th to 31st of this year. Hundreds of carrier-based planes left death and destruction on these islands while long range naval guns pounded them from the sea. No doubt there was great consternation in Tokyo when the reports of damage to this inner ring of Japanese defenses were received.

Woleai

WOLEAI is in the Western Carolines about halfway between Truk and Palau and south of Guam. There is a fairly large anchorage for all types of ships and seaplanes, with sufficient land area for the air strip constructed in the center of the main island. However, Woleai is not as well protected by reefs as is Truk, so ships in its lagoon are vulnerable to torpedo attack. There are two lagoons, each with fairly good harbor facilities.

The population of Woleai in 1935 was less than 600, mostly natives. These are closely related in speech and customs to the inhabitants of Truk. It seems likely, however, that most of the natives have been removed because the islands are so small that their entire area must be required for the enemy military installations.

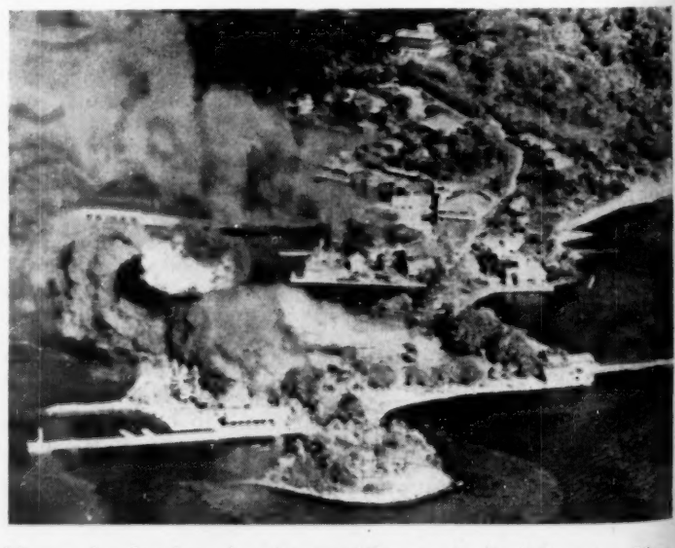
The Woleai atoll is about six miles long from east to west and about 15 miles in circumference. There is one main island and about 20 small islands and islets on the surrounding reef. All are of low coral formation, covered with coconut and other trees.

Yap

LARGER and more important is the Yap group. Yap was important before the war as a cable center. Following World War I President Wilson made a strong effort to have Yap excluded from Japan's mandate of former German possessions, or at least to maintain international rights to its cable and radio facilities. He was anxious to prevent the cables from passing entirely into Japanese hands since they offered an alternative connection with the Philippines and China if the main cable should be out of order.

President Wilson was unsuccessful in his far-seeing plan to internationalize Yap. Delegates to the Peace Conference—except the Japanese ones—were not interested in Pacific problems, and Yap was included in the mandate to Japan without reservations. When the American government revived the question in 1920 the Japanese conveniently forgot that their delegate had even participated in discussion of the question and refused to permit the United States any special rights in Yap. After a controversy of about a year a treaty was signed in which it was stated that "The United States and its nationals shall have free access to the island of Yap on a footing of entire equality with Japan." However, no Americans were actually allowed even to visit Yap, much less to live there or to have anything to do with its cable and radio facilities.

Yap is one of the strangest places in the world. It is a relic of a forgotten age. On it are to be found manners and customs known nowhere else on earth. It is, for example, the only spot in the world in which stone coins up to 12 feet in diameter are used as money. With all their zeal for souvenir hunting Marines will find it difficult to bring home samples of these.



Heavy clouds of smoke almost obliterate the buildings on Yap, after the raid of March 31.

As to so many primitive people (and more civilized ones, too) their native land is the center of the world to the inhabitants of Yap. The very word, "Yap," means, "The Land." The native rejects with scorn any intimation of alien customs and he is convinced that foreign civilized ways are not for him.

There are twelve native kings in the Yap islands. Although some of their old glory is departed, they are still respected and obeyed by their people. The Japanese government recognizes that it can only rule these independent people through their kings and thus they make every effort to influence them and to maintain their power.

A landing on Yap would be extremely difficult, not only because of Japanese fortifications, but because of the steepness of the coral reef and the strong natural obstacles that would be met. The shore line is an almost impenetrable tangle of mangroves, and both the water and swamp areas are filled with disagreeable fish and animal inhabitants. Willard Price describes these natural obstacles and enemies in one of the most interesting chapters of his book, *Japan's Islands of Mystery*. He then adds:

"Once on shore, there is not much to fear from Mother Nature. There are no snakes on Yap, nor any animal more dreadful than the mosquito, which is non-malarial. The big bat prefers fruit to human blood. The robber crab with his dangerous pincers a foot long will not fight unless attacked.

"Moving through the jungle, it is well to avoid stepping on a green rock until one is sure that it is a green rock and not a *galuf*. This is a giant iguana four or five feet long. It does no harm unless annoyed, then inflicts a vicious bite. The natives dread it, not so much for its bite as for its supposed supernatural powers.

"An excellent tree to avoid is the *chongot* or poison tree. Tall, with light bark and long leaves, it looks most respectable. But it is a villain at heart. Its acrid white juice causes terrible swellings and sores, often resulting in death. Arrows and spears are tipped with the poison.

"Jungle roads are numerous. Some of them were paved with stones by the ancient inhabitants and the pavements are still in good repair. According to the *Japan Year Book*, Yap in 1937 had 118 miles of road.

"So there is not so much difficulty in getting about Yap after one lands as there is in making the landing."

THERE are some 4,000 natives on Yap who, Mr. Price says, can be expected neither to help nor hinder the invading forces. The natural courtesy of the natives is such that they are likely to shelter the stranger with equal courtesy whether he be American or Japanese.

They are a kind of people of whom a Spanish priest once observed, "If they cut off your head it will not be because they hate you, but merely because they want it as a souvenir."

Yap in our hands will be a useful point of departure for a future attack on Palau, the major Japanese naval base 300 miles to the southwest, which has already been raided by an American naval task force.

Mr. Price adds a final word that Marines who reach this strange island may well bear in mind. It is this: "Preserve Yap for the archeologists. It has never been seriously studied. Its many stone ruins and its present inhabitants are both vestiges of a former age. With no written language, Yap has not yet caught up to the Egypt of hieroglyphics and papyrus three thousands years before Christ. Yap is one of the world's few remaining windows to the distant past, an invitation to learning if we are interested to know how our forebears may have lived before the days of recorded history."

Palau

PROCEEDING west from Yap the last obstacle before the Philippines is Palau. With the possible exception of Truk, Palau is the most important Japanese base in all Micronesia and the headquarters of the Nanyo government, administering the entire Japanese Mandate. It is of great military value and may well hold the key to the Philippines, the East Indies and China.

In Palau, as long ago as 1935, Price observed some interesting things. Arakabesan, an island two miles long, was being leveled and converted into a large airfield. A native village had been demolished and replaced with large gasoline storage facilities. On another island broad three-lane highways led into the jungle to an unknown destination. Many places were forbidden, not only to the casual visitor, but even to the native.

Palau is a volcanic chain of islands 90 miles long and about 20 miles wide. There are 26 principal islands and over 100 lesser ones. A fringing reef near the shore and a barrier reef several miles out form a natural torpedo-proof barrier. Behind this lies a 60-mile long deep water lagoon —large and deep enough for the entire Japanese fleet.

Before the war Palau was a Japanese spearhead pointed at the heart of the Philippines. Today it is a shield against United Nations attack from the south and east. Tomorrow it may well be again a spearhead pointed toward the Philippines, but this time for their liberation rather than their conquest. The nearest Philippine point is only 500 miles away. Palau may well prove even more useful to the Americans than it has been to the enemy.

In the attack on Palau March 29 and 30 the American Naval task force did a tremendous amount of damage at relatively small cost. When the score was tallied up the Navy reported 28 Jap ships sunk and 18 damaged, 160 Jap planes destroyed and 54 more probably destroyed, with more than 100 buildings wrecked or badly damaged. Our losses were only 18 men, 25 planes and no ships.

If Palau has been an important naval base for the enemy, it will be even more important when it is in our hands. Heavy and medium bombers from Palau could command a considerable and vital part of the Philippines, and naval forces operating from Palau could make it extremely difficult for the Japs to maintain their communications. Undoubtedly Palau will be again in the news before long and will play an important rôle in the final phase of operations in the Central Pacific.

The Marianas

NORTHWARD of the Carolines lie the Marianas. One of these, Guam, is familiar to us because it has been an American possession since 1898.

(Continued on page 20)

Geometrical fields of sugar cane carpet Saipan Island.

Above: Giant billows of smoke and dirt mushroom above the runway on Japanese-held Saipan during the raid on that key island in the Marianas group.

Bombs Burst on he

SAIPAN

The first American attack on the Marianas Islands occurred on February 22 and 23, 1944, when a task force struck at Saipan and Tinian, at the southern end of the island group.

Jap planes burning on the Japanese airfield on Saipan.

Below is a view of a section of Garapan village on Saipan. Rows of tightly packed houses indicate a prosperous Japanese settlement.

Above: Two Jap ships hit. *Upper right:* When this picture was taken, five Jap ships were sinking or damaged. In all, forty-six Japanese vessels were sunk or crippled.

The Seaway to Tokyo

PALAU

On March 29 and 30, 1944, a powerful Navy task force moved in and blasted a major Japanese base at Palau. The strategic island lies southwest of Saipan, within 600 miles of the Philippines.

At right and below: Three high-altitude camera shots reveal the pounding delivered to Palau during the March raid.

Housetops of Agana, Guam's capital. The break in the coral reef offshore marks the original mouth of the Agana River. This view was taken from Fort Apugan. Photo courtesy National Geographic Society and Dr. S. L. Higgins.

Until the Japanese treachery of December, 1941, Guam was a lone outpost, completely surrounded by Japanese islands. The nearest of them, Rota, was only 49 miles away. Had we known as much about the Japanese fortification of its mandated islands as we do now, we might not have been so complacent about Guam.

Until 1936 the Washington Treaty forbade us to fortify Guam, just as it forbade Japan to fortify its mandated islands. We now know, however, that while we were removing the guns that we had on Guam during World War I, Japan was preparing bases and fortifications in the islands that had been entrusted to her by the League of Nations.

When in 1936 the Washington Treaty expired, the way was open for the fortification of Guam. In 1939 the Navy asked Congress for five million dollars to improve the harbor and airport. The request was refused for two successive years. Early in 1941 Congress did authorize an appropriation of $4,700,000.

What the Navy really wanted was from seventy-five million to two hundred million dollars to make Guam an advanced base. It may be questioned, however, whether even this development would have been sufficient to offset the fact that a base on Guam would have been surrounded by enemy territory with its supply line open to attack from enemy bases to the north, south and east of it.

Since Guam was the only bit of American territory in that part of the Pacific, over 1300 miles from the Philippines on one side and approximately the same distance from Wake in the opposite direction, it served as a valuable way station for the Pan American Clippers. Whether it will ever again serve even this purpose is doubtful as there are other islands among the ones to be taken from Japan that may serve better, both for naval and commercial airline possibilities.

But Guam is designed by nature for a combined land and water airport because its entire north half is one continuous plane 200 to 500 feet above the sea. Apra harbor on the west side of the island is about 3½ miles wide and four to twenty-seven fathoms deep, with facilities for a considerable number of ships. Guam also has agricultural possibilities, for it is the largest and most fertile of the Marianas islands. Its rich agricultural resources are virtually untapped and its natives are friendly to us because they have been well treated by the United States naval station for many years.

Saipan

Northward from Guam in a broad arc lie the rest of the Marianas which were a part of the Japanese mandate. The two more important of these are Saipan and Tinian, both of which have been thoroughly exploited by the Japs. On Saipan, formerly an unproductive island, there is now a tremendous sugar factory where sugar from all of the nearby islands is processed. There are some 40,000 Japanese here and they outnumber the natives eight to one.

But there is more than sugar on Saipan. Its seventy-two square miles contain many flat areas that have been developed into military airfields. The lagoon has been dredged to form a protected harbor, but the airfields are more important because of the strategic location of the island. It is only 1300 miles from the Japanese mainland and there are many intervening islands, so that even short range fighter planes can proceed to it by easy hops from Japan. Using Saipan as a springboard, bombers can range far out into the Carolines and can threaten our sealanes when we gain a foothold in the Carolines. Saipan and its sister island of Tinian have, therefore, already been raided by an American Navy task force and doubtless will receive further attention in the near future.

The Marianas are the last islands of the Japanese mandate and the outposts of Micronesia. Between them and Japan, however, lie two other important groups, the Bonins and the Izu islands.

The Bonins

THE Bonin Islands have been Japanese for a long time, but they were once claimed for America. Their earliest recorded discovery was by a Spanish explorer in 1543 but the Japanese began to be interested in them toward the end of the eighteenth century. Their strategic importance was emphasized by the Japanese patriot, Shihei, in 1783; but he was considered a traitor because that was during Japan's era of seclusion when the emperor made every possible effort to cut Japan off from the rest of the world. In 1827 a British sea captain took formal possession of the islands for King George IV, but the real ruler for many years was an American adventurer named Nathaniel Savory.

In 1853 Commander Perry stopped at the Bonins on his way to Japan. Perry decided that the British claim was too tenuous to be respected and he, therefore, raised the American flag, persuaded the colonists to elect Savory chief magistrate, set forth American laws and established a base for his squadron in the nearby Loochoo islands. He wrote to Washington: "Every day of observation strengthens the opinion that the large and increasing commerce of the United States with this part of the world makes it not only desirable but indispensable that ports of refuge should be established at which vessels in distress may find shelter." With this he couples the warning: "Some other power less scrupulous may slip in and seize upon the advantages which should justly belong to us."

But Perry's program for developing the Bonins under the American flag met with no interest in Washington and the islands were left to "some other power less scrupulous" –that very Japan which Perry opened and which proved such an apt pupil of Western imperialism.

There are twenty islands groups in the Bonins with many small islets. The number of these varies from time to time because of volcanic action and earthquakes of which several a day are recorded. There are apparently three Japanese bases in and near the Bonins—at Peel island (called by the Japs "Chichi Jima"), Marcus (called by the Japanese "Minamitori") about 700 miles east, and Amami in the Loochoo Islands (Ryuku Retto), about 700 miles west.

With the Bonins in American hands Japan will have no further protection for its mainland. The tiny islands of the Izus, while doubtless fortified, can scarcely cause trouble after so many greater have been overcome. And Admiral King has promised that the coast of China will not be overlooked.

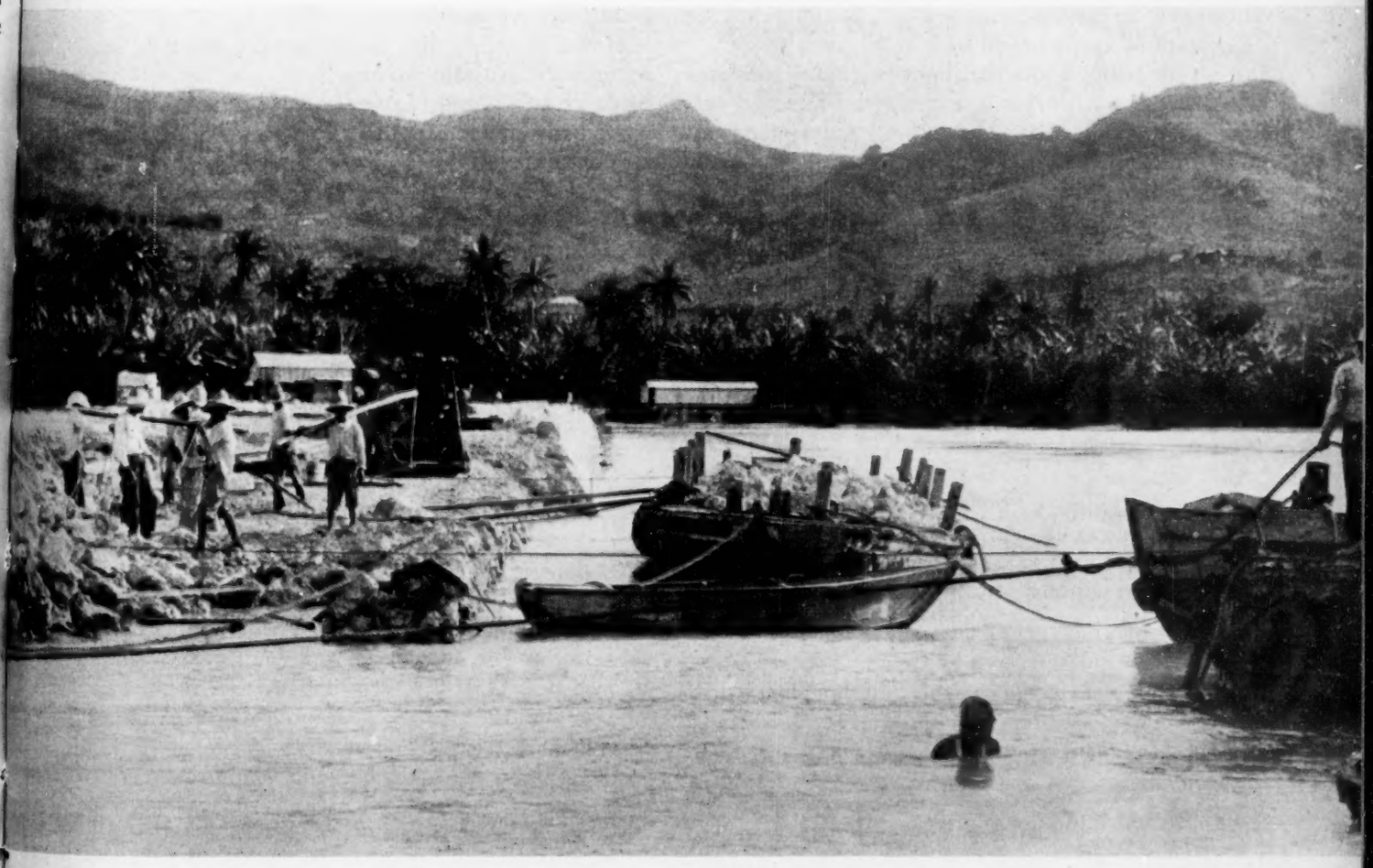
Hanson Baldwin, discussing the importance of these islands, wrote in the New York Times of April 26, 1944: "The Marianas and the Bonins offer stepping stones toward Japan from our present positions in the Marshalls. But the islands are so small and the problems of developing them as adequate air and naval bases would be so considerable that caution might dictate a longer and more circuitous route to Japan—via Formosa or the Philippines and the coast of China. In either case, the string of islands stretching southeastward from Japan and providing for the enemy stepping stones and staging bases to the Carolines and Marshalls are of great strategic importance. . . ."

Through the islands of Micronesia runs the principal seaway and airway to Japan. Doubtless other roads will also be explored but today the Micronesia road is most in the public eye; certainly America has an important destiny in these thousands of islands and we cannot escape that destiny. Today most of these islands are in Japanese hands. Tomorrow they will be in American hands. And beyond Micronesia lie the Philippines, the China coast, and Japan itself.

Recommended Reading

JAPAN'S ISLANDS OF MYSTERY. By Willard Price. New York: John Day Co., 1944. $3.00.

This book, from which liberal quotations have been made in the accompanying article, is unique. The author is a well-known American naturalist, with a genius for keeping his eyes open to other things besides flora and fauna. But it was on the basis of studying the plant and animal life of Micronesia that he and his wife gained permission from a suspicious Japanese government to visit their mandated islands some years ago. What he found there, and how he narrowly escaped the fate of other white men who failed to return from these mystery islands, is at once a fascinating story and an important survey of what Marines will find as they advance westward from the Marshalls or northward from New Britain.



In 1935, when this picture was taken, the Japanese were furiously fortifying their island possessions. Here a pier is being constructed on Saipan. Photo courtesy of Willard Price and the National Geographic Society.

PUT OIL ON IT

By Captain Melvin M. Johnson, Jr., USMCR

MARINES and army infantry are landing and fighting under every variety of climatic conditions on the face of the globe—this is after all a global war. Infantry weapons are expected to function under the most severe circumstances. Battles are being fought in the heat of humid jungles or dry, dusty deserts; or in the bitter cold of damp foggy arctic islands or frozen wastes; in the downpour of torrential rains in places where the twenty-four hours' precipitation often exceeds as many inches; along beaches where exhausted men crawl after wading through salt water surf in which boil the jagged sand particles stirred from the shallowing bottom, often of a sharp gravel or coral composition. Salt, dust, and dirt are all circulated through the mechanism of infantry weapons, which are thereafter dusted liberally with wind-blown beach sand; or, as in Flanders mud of World War I, the weapons may be immersed in water-filled trenches, muddy foxholes, swamps, or marshes. Yet infantry automatic weapons—the rifle, carbine, pistol, submachine gun, auto-rifle, light machine gun, machine gun—must be kept in top-notch condition.

The simplest and easiest field remedy under such adversities is found in an oil can with a standard grade of light ordnance issue oil in it. If no butt trap is available, the oil can may be carried in the pocket. Therefore:

1. *Carry an oil can with oil in it at all times!*

Most of our troops know that light machinery does not work well with very heavy oils or greases. Moreover, very light oils are preferable in cold weather. Automatic weapons of the .45 and .30 caliber types especially are light machinery and work best with light oils, not heavy greases. Graphite greases of recommended grades, as issued, are best used on cam surfaces such as the unlocking cams and cam lugs of the M1 rifle, M1 carbine, and the M1903 rifle cocking cam. Too much grease creates a sluggish action. Automatic weapons depend upon momentum for breech opening. Heavy grease or, in cold weather, excessive oil, opposes momentum.

2. *Don't use heavy greases! Oil very lightly in cold weather!*

BEFORE going into action, the weapon should if possible be field stripped, wiped off, and normally lubricated. The chamber and ammunition should be clean and dry. If dust or sand is blowing, the oil collects the grit. So in such conditions oil sparingly, and do not get oil on the cartridges or clips or in the chamber.

3A. *Normally start with reasonable lubrication of the weapon, clean dry ammunition, clips, and barrel chamber.*

3B. *In cold climate use a film, if any, of oil, but keep firing pin, hammer, etc., dry to insure against misfires due to sluggishness.*

3C. *In jungle or similar heavy rainfall areas use more oil in the action than normal. Excess oil may spatter in the eyes in firing, though in a rain you might not care.*

Assume that during the engagement the weapon is severely abused, exposed to sand, mud, and dirt. The action may become sluggish. There is no opportunity to field strip the piece for cleaning. What then is the remedy?

4. *PUT OIL ON IT!*

Where should the oil be applied, and how?

Under conditions where the chamber is fouled with grit, dirt, mud, and sand, *but only then,* it is permissible to apply oil through the open breech onto the cartridges in the feed way or magazine, or, in severe cases, into the chamber itself. Oil should also be applied to the bolt path and bolt or breechblock surfaces. If time permits, oil the ignition parts as well (*i.e.,* hammer and sear mechanism of M1 rifle, M1 carbine, and the like.)

OIL normally should not be applied to the cartridges or chamber when the weapon is reasonably clean. Oiling the ammunition and chamber then results in hammering the locking lugs of the mechanism. This may cause the lugs to crack. Part of the chamber pressure is absorbed in the walls of the cartridge case, but when it is oiled the case takes no thrust. Instead the thrust tends to hammer the breechlock and abutments severely.

However, when dirt, excess powder residue, sand, salt water, excessive rain washing, rust, etc. have affected the barrel chamber, and to some extent the ammunition, then oil actually counteracts this excessive friction and tends to restore normalcy.

5A. *Oil is applied to the bolt path, bolt or breechblock body, and possibly the hammer mechanism.*

5B. *Under severe conditions, when the barrel chamber and ammunition are fouled up, oil may be applied on the ammunition or even in the chamber.*

5C. *The application of oil on the cartridges or into the chamber is against regulations under normal conditions when the weapon is clean and the action lubricated.*

It should be understood that the most important phase of operation in any automatic weapon is at the moment of initial extraction. If the empty case extracts freely, the weapon can function powerfully. If extraction is difficult due to friction caused by sand, dirt, excessive rain, etc., then the use of oil, if time does not permit cleaning, can restore easy extraction.

Dirty ammunition or barrel chamber may produce a broken rim due to tearing off by the extractor claw or equivalent. This is very serious as it is often impossible to clear the case without a cleaning rod, usually not available in most weapons. Therefore, every effort should be made to keep the chamber and ammunition clean and free from dirt.

6. *Keep the chamber and ammunition clean.*

Another remedy, if oil is not available, which can be used under extreme conditions when the ammunition and chamber are fouled, is to expectorate or otherwise apply

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saliva on the cartridges. This will help for several rounds in many instances.

7. *Spit on the cartridges if you have no oil.*

Heavy rain tends to wash off all lubrication from metal surfaces, leaving the metal extremely sticky and tending to prevent automatics from ejecting and feeding properly. The application of waterproof greases to the operating cam surfaces tends to obviate this condition to some extent. Such greases should not be put on the receiver and bolt path surfaces as the grease tends to develop a sluggish action. On the operating cams which unlock and lock the mechanism greases as issued and specified should be applied before entering an engagement, if possible.

In carrying the weapon during a heavy rain try to keep the breech closed and the ejection port or exposed breech protected. For example, carry the M1903 rifle, M1 rifle, and M1 carbine bottom side up if not actually in impending use. Such weapons as the BAR should be carried with the breech closed on an empty chamber, top side up or rolled over half way to the right if possible. Weapons with receivers closed on top, such as the Browning machine gun, can be held normally.

The M3 submachine gun, developed under the direction of Colonel René Studler of the Ordnance Department, incorporates an ejection port cover which not only fully protects the mechanism but also functions as the safety, this gun being cocked with an open bolt yet thus fully covered.

Water on the ammunition tends to aid functioning, if anything. It is the breech mechanism of the weapon which is most adversely affected by a heavy downpour.

8A. *Keep the breech mechanism closed and protected in a heavy rainstorm.*

8B. *Do likewise in a sandstorm, hailstorm, snowstorm, etc., for obvious reasons.*

Despite the adverse effect of excessive water in the mechanism, water is less harmful than mud, sand, dirt, etc. For example, if a gun is full of beach sand and the water is near, dip the piece in the water, washing the sand off as much as possible. The same is true in mud. The surface water of a mud puddle may be relatively free of particles. Washing the gun in this surface water is helpful.

9. *Water is useful to wash off dirt, sand, mud, etc. when the weapon is badly fouled.*

The fact that a weapon has been faithfully cleaned and oiled before undergoing abuse in the field does not preclude difficulty with automatic operation after it has been subjected to abusive conditions in the field. Occasional application of oil, intelligently applied, insures positive operation when fire power is needed. Pouring oil on the hood of an automobile does not lubricate the crankcase. Put the lubricant where it is needed.

10. *A little oil on the right places inside the gun action is more effective than a bucket of oil poured on the outside.*

In summary:

Carry an oil can.
Keep oil in the oil can.
Know where your weapons need oil.
Keep your weapons well oiled except in severe cold.
Keep chamber clean.
Oil the ammunition or chamber if conditions are severe.
PUT OIL ON IT.

Pilots, Stand Aside

By Captain Norman W. Noble, USMCR

Bombardiers and gunners take the air over El Centro in a rigorous training program. The pilot merely flies for them. Early results are impressive.

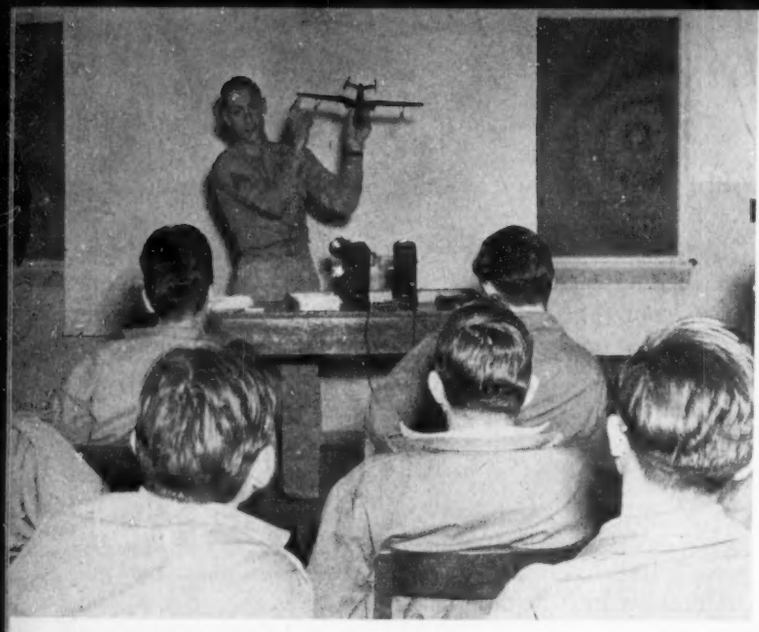
OUT in the California desert, in the middle of the sun-baked Imperial Valley, at 50 feet below sea level, is the only bombing and gunnery school in either the Navy or the Marine Corps that puts its students in the air while training.

The school holding this distinction is the Bombardier and Air Gunner School at the Marine Corps Air Station, El Centro, Calif., and the distinction it holds is important because of the outstanding record it has in producing experienced bombardiers and air gunners.

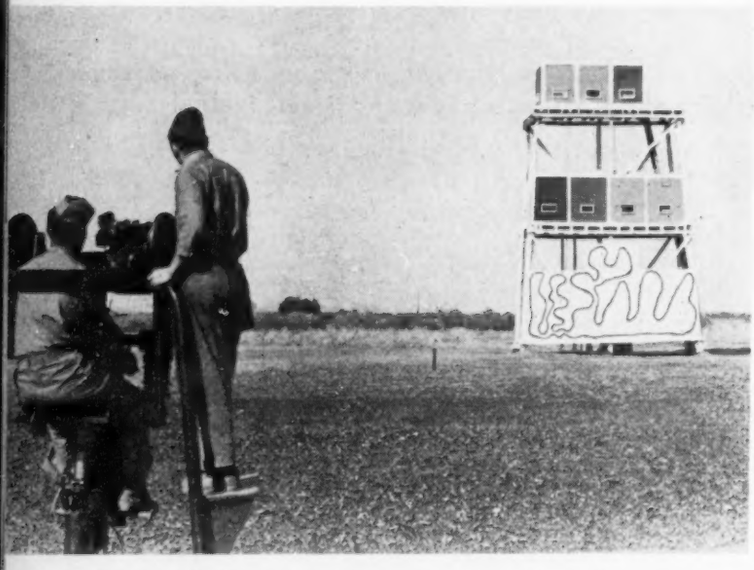
Need for such training became appallingly apparent at the Battle of Midway and again in the first days of Guadalcanal. It was considered advisable to develop a program to give aerial gunners more training in the air.

At the direction of Major General Ross E. Rowell, commanding Marine Aviation in the Pacific, Major H. R. Jordan was detailed back from Hawaii in 1942 to initiate a training program that would include practical instruction for gunners and bombardiers. Under Colonel Elmer H. Salzman, then ordnance officer of the Second Marine Air Wing, Major Jordan, now ordnance officer of Marine Fleet Air, West Coast, guided the unsteady growth of the new child.

Originally set up at North Island, the Bombardier and



Classes in aircraft recognition are an essential part of ground training.



From a mobile machine-gun mount a student directs practice fire at a target whose face is a pattern of irregular lines resembling the path an enemy plane might take in evasive maneuvers.

Below: **An aerial gunner checks his gun prior to a practice firing flight.**

Air Gunner School was transferred to the Marine Air Station at El Centro in February, 1943. Those first few months offered little more than previous schools, for no planes were available. Hardly had the ground school curriculum been smoothed out satisfactorily, however, when a few planes were acquired and genuine air-to-air training (firing from a plane in flight at an aerial target) began.

Although the embryonic school operated with the blessing of Brigadier General Lewie G. Merritt, then commanding Marine Fleet Air, supplies and matériel were hard to obtain. At first, personnel and supplies were gathered from any and all available sources. Now, however, in view of its successful record, the school is receiving recognition in the form of equipment and personnel.

Most of the organization's twenty dive bombers are planes back from combat or considered worn beyond a condition fit for combat. But thoroughly repaired by the school's expert mechanics, the planes go back into service fully certified for many more hours of flight.

The B and G School is glad to get and recondition such planes and thinks little of running up an average total of 400 hours a week with the twenty odd planes it has put back in service. When the time comes for an overhaul, the hours between darkness and dawn are utilized—for ships must be in the air every day. Mechanics were brought together from all available sources and trained by the school. They do an excellent job of keeping the flying classrooms in the air.

THIS determination to provide students with adequate air-to-air training before they go into actual combat stems from the conviction on the part of the school's authorities that bombardiers and gunners should have this training behind them when they join an operational group. Major Thomas C. Colt, Jr., commanding officer of the school, declares that too often at that late stage emphasis is necessarily placed on pilot training—and that the gunner, unfortunately, is many times merely a rear seat passenger. Any firing he may get probably will be on the way home after a pilot training flight. Perhaps the pilot will make a few passes at a white-cap on the ocean below, letting the gunner squeeze off a few rounds at an inadequate target.

Proof of Major Colt's contention is seen in a set of figures he recently submitted to higher authority. These figures revealed that one class of thirty-nine graduates of the ground-type air gunners school were able to register only six scattered hits in air-to-air firing out of a total possible 4,080 rounds. These students were even unable to fire more than 2,748 rounds of the total—and they were attached to a squadron presumably ready for combat.

The air gunner's course, ordinarily, is nine weeks long for a novice just out of boot camp. If a man is a graduate of a ground-type air gunner school, he can complete the course in six weeks. But to be a graduate of the ground-type school, students must complete a course that takes from four to six months.

That Navy authorities agree with Marine Fleet Air in the air-to-air training principle is shown by the fact that commanding officers of Naval gunnery schools are enrolling in the El Centro school to learn the Marine technique and pass it along to their charges.

The school directs all its activities for the benefit of its

students. It is a flying organization in which the pilot, so to speak, takes a back seat. Pilots fly for the sole purpose of providing firing practice for the enlisted man in the rear cockpit. Every hop is especially for him.

The rigorous nine weeks' course is devoted to concentrated learning. About 30 per cent of the trainees fail to complete the course, but as Major Colt points out, "A man who gets through will have proved that he can shoot and that he can take it."

The last two weeks are spent in firing from the air—the final test in the making of an aerial gunner. To qualify, a man must get twenty hits in the sleeve out of 720 rounds.

The test is divided into six stages, each man having the opportunity to fire 120 rounds in each stage. High above the barren desert, he wings after the elusive sleeve target trailing several hundred feet behind the tow plane. The first and second firing flights consist of what are known, technically, as "simple parallel runs" at the sleeve. But trying to hit a little patch of white cloth streaking across the blue sky and brown desert while bracing yourself and gun against the slipstream of your own plane is not too simple, even for an experienced gunner.

The firing flights become increasingly tough. During the third flight, the student gets crossover runs that wrap up his plane in flipper turns. Number four presents the problem of hitting the speeding target while diving and climbing—and tribute may well be paid to the man who can fire effectively in a pull-out. The fifth stage is a combination of all that has gone before, with surprises on every pass. The final firing flight is a "roundhouse" run, with the tow plane flying tight circles, the attacking plane after it.

By the time a man has completed the half dozen stages, he probably has made every maneuver he will encounter in combat. Twenty hits out of 720 seem simple until compared with those of the group of thirty-nine men who chalked up only six out of 2,748 rounds fired.

The ground courses are equally intensive. For seven weeks, potential gunners grind away at radio, radar, code, blinker, plane recognition, sighting theory, synthetic devices and even survival after sea and jungle crashes.

ALL that can be said for the aerial gunner school applies to the bombardier course. It, too, is the only one of its kind which offers airborne training. Applicants first must have been graduated from navigator's school. Then follows nine weeks' additional training. Three weeks are spent in classroom training, and on bombsights and bombsight theory. Another three weeks is devoted to an ingenious device called a Link Belt Trainer, a land-based bombing instrument that glides over the floor on rubber tires and releases a pointed weight at a paper target. It employs a genuine bombsight on a simulated mission. The final three weeks are spent in the air making actual drops.

Since the B and G school began operations, little more than a year ago, over 1,400 gunners trained in air-to-air firing have been graduated. That the school is proving itself has been demonstrated in practice. Of the first graduating class, thirty-six men went into combat. After eight months of fighting, all thirty-six came back. Other examples of the value of this type of training are the recent records of Marine dive bomber squadrons in the South Pacific who fought for two months without a single combat loss.

About to peel off for a try at the sleeve, part of the student's training in combat maneuvers.

Practicing firing from portable turrets, truck-drawn over rough desert roads.

Below: The school's ground facilities, including warehouses, classrooms, administration building, turret repair shop, link trainer, and ordnance repair shop.

A Four Day Patrol

By Platoon Sergeant Francis C. Pettus, USMC

The onward sweep of United States forces up the ladder of the Solomons has left Guadalcanal in the quiet back-waters of the war, and the desperate fighting that was going on there only a year and a half ago is now regarded as ancient history in the light of many recent developments. But occasionally another tale pops up to recall the courage and ingenuity of the Marines who paved the way there for America's first land victory against Japan.

Here is such a tale, the unadorned and unedited report of a platoon sergeant who led a six-man patrol back of the Japanese lines to observe their bivouac areas and bring back other information to Division Intelligence Officers.

To preserve the full flavor of the adventure, the report is offered in the sergeant's own laconic words.

I REPORTED to the Division Intelligence Officer, with my three Raiders and met the two other scouts and the radio operator who were going to accompany us. There were also two natives going along. Information was very scarce. The D-2 told me that they had information from natives of two Jap bivouac areas about 4 miles west of Aola or about 30 miles from Henderson Field. The Division wanted to check this information and get all other information possible.

The Division Intelligence Officer looked us over and then explained the mission to me. On a small scale map of the island he pointed out the probable location of the two Jap bivouac areas. He suggested that we land in the mouth of the Aola River and that when we started our reconnaissance to push into the back country and drop down on the bivouac areas from the rear. The landing was varied a little but the reconnaissance was carried out as he suggested.

We left the Naval Operating Base at Kukum at about 1700 and arrived at Aola, our landing point, a little after dark. One Higgins boat which was equipped with a TBO radio took our party. The boat, of course, had two light machine guns mounted in the bow. The senior sailor was a bit jittery, because he had lost two of his crew a few days before on a landing near the Matanikau River. However, he was a good man and had an excellent knowledge of the waters in which we were sailing. There were two other sailors in the crew.

Just as we were leaving Lieutenant Commander Dexter ran out and shouted, "Bring back a boatload of fruit." I thought to myself that this was no fruit-gathering expedition, but it so happened that we did get a boatload of fruit.

The trip down to Aola was uneventful. Our Higgins boat went out about two or three miles and followed the coast line down. The coxswain said that we would get wet, but we did not. The sea was a little choppy, but we shipped no water. We were even able to make a dry landing.

We had one native guide along with us who was to contact some of the natives that were going to help us. We were lucky in this because I do not believe that we should have gotten to first base if we had not had the help of the natives. Remember that. Cultivate the friendship of natives wherever you go. It pays big dividends. But be careful not to be too intimate. Maintain your dignity and reserve but do not assume a *too* superior attitude.

Shortly after dark we arrived at our landmarks, which were two small islands off the beach at Aola. The coxswain advised that it was risky to go up to the mouth of the Aola River because there was a sand pit there and we should be in danger of running aground. For this reason we landed on the beach at Aola.

ON the trip down we had planned our method of landing. We put the natives ashore with instructions to notify Eroni, the Guadalcanal practitioner, that we had arrived. After we had put the natives ashore we pulled out and anchored. In about two hours the natives returned and signalled us from the beach and we went ashore again.

The natives told us that Eroni was sick and sent word for us to come up to his hidden house. As it is almost impossible to find this house in the daytime—much less at night—we decided to anchor offshore the rest of the night and return to the beach at daybreak.

I am sure that we made too many landings. If I had to make the same patrol over again I would land with my party, take the radio ashore, and release the Higgins boat. Of course we *thought* that we were five miles from the enemy, but we were not sure and the enemy could have been there. However, by sleeping in the boat, although on account of the many landings we increased the danger of being detected, we lessened the danger of being captured.

At daybreak we finally disembarked. I sent four men to make a reconnaissance of Aola, the government station, while the radio operator and I went to meet Eroni, the Fijian practitioner. The four men were divided into two pairs, each pair examining half of the station. The remaining man helped the sailors guard the Higgins boat. The coxswain of the boat got some fruit from the natives and then shoved off.

Aola was the governmental seat of Guadalcanal Island and was the residence of Mr. Horton, one of the British guides attached to the First Raider Battalion. The buildings are the same styles as those on Tulagi, the old governmental seat of the entire Solomon Group. They are white frame buildings, built with ample exposure and covered

with red roofs. The buildings make excellent targets for a bombing raid. The grounds surrounding the building were at one time well kept, but now they are overgrown. The station was completely deserted, and our search of the buildings showed no evidence of Japanese occupancy.

WHEN I met Eroni, I accepted his invitation for breakfast for the party, and we made his hidden house headquarters for the first day. I also met Andrew, the native corporal in charge of the police, and several native policemen.

These men had conducted patrols and knew a great deal about the Japs. At one time Andrew was caught by the Japs while he was unarmed, but he acted like an idiot and the Japs let him go. I sent Andrew and his police to get other natives who were more familiar with the Koliotumaria area, which was our western boundary of patrol. Andrew was also going to scout the Gurabusa bivouac area.

Before the Japs came Eroni lived at Aola in one of the houses, but when the Japs landed he moved about three miles inland and built a native house on the knoll of a hill deep in the jungles. He is very suspicious of the natives, even the native police in service for the British government. This practitioner lives with his wife and baby girl and the fugitive existence makes him very jittery. We spent the first night in Eroni's house, and the Fijian talked until late at night; he was happy to have company and protection.

All the natives that we contacted were happy to see us because they saw that they were not forgotten. When the Japs came the British told the natives to move off the beaches and back into the "bush." Every village in the vicinity did this. The inhabited village closest to the beach that we found was about six miles as the crow flies and it was very inaccessible. It is believed that the natives saw in us the forerunner of a large armed body that would wipe out the Japs. The Japs were not occupying the native villages in the immediate vicinity of Aola and Koliotumaria, but they were plundering the gardens.

After breakfast with Eroni I questioned him and the native boys whom he has living with him. Eroni is well educated and few of his answers were misleading. Most of the native police and many other natives speak a fairly understandable pidgin English, but utmost care has to be taken when questioning them, because their answers are misleading. For instance you ask a native, "You no go," meaning "You did not go, did you?" He will answer "Yes." However, he means, "No, I did not go." There are also other peculiarities in their pidgin English which have to be guarded against. For this reason you have to repeat your questions many times and in a different way each time. After you have asked a series of questions, go back and ask your questions over in different words. Mix the questions up. The native is very probably not trying to mislead you; he just does not exactly understand you.

Division had a report that Ishimoto, a Jap hated by the natives, was in the vicinity. Before the war, Ishimoto was ostensibly a ship's carpenter in the Solomons, but it turned out later that he was an officer in the Japanese Navy. Ishimoto had bayoneted a native chief and left him for dead. The chief was not dead and made his way back to the Marine lines from where he was taken to the hospital and cared for. This chief recovered and became a very valuable scout. He furnished very accurate information for the First Raider Battalion prior to the raid on Tasimboko. After repeated questions it was learned that Ishimoto was not in this vicinity but that there was a Jap officer by the name of Tasimoto there. The native claimed that Tasimoto was sick with malaria.

Five days before, Captain Carl, Marine Ace who was Major Smith's runner up in the first fighter squadron at Guadalcanal, was shot down off Aola. Eroni found the aviator and told him that he would hide him at his house. Captain Carl thought he would be safe at Aola. Eroni insisted and took the captain to his house. The practitioner said that a few minutes later a Jap patrol entered Aola. This was all valuable information, for it told that the Japs were active. We were also told that a Jap patrol of 53 armed men had been seen a few days before.

The first night Eroni and Captain Carl tried to go overland to Henderson Field, but there were too many Japs between them and camp. The next day the aviator repaired the practitioner's small motor boat, and the two men returned to Kukum and Henderson Field. Very often afterwards Captain Carl flew over Eroni's hidden house and dropped sugar, tobacco and other things. Captain Carl's parachute and the cover to his rubber boat were still at Eroni's house when our patrol stayed there. Eroni was making belts out of the parachute shrouds. He was saving the silk of the parachute to make clothing later.

IN the afternoon the native corporal's party returned from their mission and reported that the Japs were still in the vicinity of Gurabusa and that the natives who were going to help us were notified that we would pick them up tomorrow. I questioned the native police and further verified the report of the 53-man Jap patrol and also verified the report that the Jap officer in the vicinity was Tasimoto and not Ishimoto.

I then returned to Eroni's house and laid the plans for the next two days. Corporal Laverty and Private Wimple together with two armed natives would scout the Jap bivouac area closest to Eroni's. They would approach the area from the back country, using trails that the natives knew but which we had been told were unknown to the Japs. After completing this mission, they would return to the Radio Station. A native that knew the location of this station would go with this party. It was planned that this patrol would be completed in one day.

I took the larger patrol because of the long distance we had to travel and because of the difficult terrain we had to cover. This patrol consisted of myself, Corporal Driscoll, Private First Class Haas, Private Masara, Corporal Andrew, the native, one other armed native, and two unarmed natives (except for knives). The two unarmed natives were very familiar with the area we were going to reconnoiter. Breakfast would be at dawn and we planned to start immediately after eating. Corporal Andrew was to meet us with his men on the old trail below Eroni's house.

After our plans were discussed and the information that we had already obtained consolidated, we took it easy and listened to Eroni tell of his experiences with Captain Carl. The Captain was about all the practitioner could talk

about. However, he did discuss the possibilities of getting his wife and baby to Australia. We slept in Eroni's native hut on a huge piece of canvas.

The following morning after breakfast we met Andrew's party and proceeded along the government trail to a village on the Gurbusa River. This village was deserted and according to the natives no Japs had been seen in the area, and the gardens surrounding the village were untouched. The village was four or five miles inland. All information that we received indicated the Japs remained very close to the beach and probably never ventured more than 1000 yards inland. Perhaps they were just as afraid of the natives as the natives were of them.

The government trail to the Gurabusa River was in good repair. However, beyond this point traveling was more difficult because of steep, wet, slippery hills, and also because of a swamp about 150 yards wide. Crossing the swamp was treacherous. There were logs held by long stays across the swamp, but many of the logs and stays were rotten, and the solid logs were very slippery. I planned on crossing to time the reconnaissance so that we would be at this swamp at daylight on our return trip. Crossing at night, even though there was a half moon, would have been very dangerous.

TRAVELING improved after crossing the swamp, but there were several steep, slippery hills between the swamp and the village of Gegende. On these hills, the natives showed aptitude in scouting. When we approached the bottom of a hill, without any orders from me, one native would leave our column, run up to the crest of the hill, and observe the other side. These natives were very agile and could cover ground very rapidly. They seldom showed signs of fatigue. However, they were clothed only in light shorts and shirts and carried only a knife or a gun with little ammunition. The Marines of the party, on the other hand, wore full dungarees and steel helmets. We were armed of course, and carried a great deal of ammunition and two grenades. At this time we also carried our combat packs.

Shortly after noon we arrived at Gegende, a native village which was inhabited. This village was rather crowded because a large number of natives had moved up to it from the beach villages.

Gegende is located on the flat crest of a hill. The native huts varied in construction. Some of them were built on columns of saplings, but most of them were built directly on the ground. These houses were very gloomy and the few windows in them were closed. The huts surrounded a bare, rectangular area. There were no trees in the village itself, and the sun beat down untempered. Gegende would show up very definitely on an aerial photograph, because of the clearing in the jungle, but the huts would probably be hard to distinguish. They are about the same color as the hard, brown ground they are built on. However, they cast a very definite shadow.

When we arrived, a large group of native men, probably the entire native population, turned out. There were no women in the open. Women in the Solomons are kept out of sight. The only pure native woman that I saw on Guadalcanal was Eroni's wife. Many of the natives had their faces painted and their hair combed out straight away from their scalp. This bushy hair, which stood straight out 8 or 10 inches, is naturally black, but exposure to the sun or dying has turned it a rusty red. Most of the natives had a very fierce appearance. However, many of them are thin and emaciated.

We stopped at Gegende for about an hour to question the natives and to have a short rest and lunch. Questioning natives in this village was very difficult, because the few that knew any English spoke very poor pidgin English and I had to rely almost entirely on Andrew's interpretation. Andrew, himself, was hard to understand.

Division estimated that there were 200 Jap soldiers and laborers in a bivouac area east of Koliotumaria. After questioning the natives for almost an hour, I concluded tentatively that there were not over 100 Japs in this area. The natives at Gegende said there were about 125, but because the Japs had caused them to leave their homes, I believe the natives' estimate was greater than the actual number. We found out that there was a native trail leading through Gegende's gardens, over hills, and through swamps, which led to the vicinity of the Jap bivouac area. This was what we wanted. One of the natives knew it very well, and he went with us.

Gegende is about six miles from the sea, and the terrain most of the way is very bad. After passing through native gardens, and then crossing some fairly open ground, we descended a very steep hill. Then the swamps began. Some of the swamps have fallen logs in them, but these logs do not make a continuous crossing and you often find yourself knee or even waist deep in water. The Marines in our party wore regulation field shoes, and these would fill up with water. This water, sloshing in the shoes, would make a loud noise when dry ground was finally reached. Some other type of shoe should have been used.

OUR party zigzagged through a mile of swamps before we came to a native house. If the Japs had found this house, they had not plundered everything, because there were overripe tomatoes on the vines and the gardens merely looked uncared for and overgrown with weeds. We passed through the gardens of the house and then came to the edge of the cultivation. Another swamp was ahead of us, but between this swamp and the gardens, grass about 3 feet tall bordered the trail. The native who was up front with me was in the grass on the left and I was on the right. The rest of the patrol was covering our rear. The native was looking intently across the swamp. All of a sudden he waved at me frantically. I thought that he meant for me to get down. However, he kept it up, and I finally got the idea. He wanted me to come to him. A Solomon Island native's beckon is opposite from ours. We beckon with our palms up while they beckon with their palms down. This is also true of the Japanese.

I crossed the trail and went over to the native and he pointed out a Jap bathing pool. Four Japs were washing themselves in this pool. They were talking and laughing and in high spirits. All the Japs were husky. Division reported that they believed the Japs in that area to be hungry and that their morale was low. This indicated otherwise. Our view of the area surrounding the pool was

Four husky Japs, laughing and in high spirits, were washing in the pool.

shut off by the trees in the swamp and it was getting near dark, so I told the native that I wanted to look at the beach road.

Our party then backtracked and wound through the swamps again and finally came to an open field. We skirted the edge of this field, and then ran into a swamp about 40 yards wide. The village of Koliotumaria was across the swamp. This swamp had logs over it, and you were able to cross without getting wet. I stationed the rest of the patrol to observe our rear and then I followed the native across the log.

KOLIOTUMARIA was a much larger village than Gegende, but it was deserted. The ground of the village itself was bare. A hasty examination of a small part of the village showed no signs of Jap presence or occupancy.

We proceeded to the beach road. This road was about 40 yards from the beach, and was in a coconut grove. The roadbed was sandy and bore the tracks of marching men and also the tracks of a heavy vehicle or vehicles. Because of the sandy roadbed it was impossible to determine whether the vehicle tracks were left by rubber tires or wagon wheels. I considered this important because on the Tasimboko road the Raider Battalion captured several 75mm. guns mounted on wagon wheels and pulled them into the sea with Higgins boats. The native with me said that there were lorries (trucks) left by the British that the Japs were using. Later Captain Clement, a British Army officer who was attached to Division, said that this was probably true. When he left this area he took only the carburetors from the trucks. The Japs had plenty of time to get other carburetors.

After examining the tracks I looked up the road to the east and saw a Jap patrol approach us. These Japs were armed and seemed to be making a routine patrol. There were about twelve Japs in the patrol. The native and I were in an exposed position, but I do not believe the Japs saw us.

I touched the native and pointed up the road. He took off across the village like a deer, waving at me to follow as he ran. I looked again up the road and then ran after him.

I recrossed the logs across the swamp in about one-third of the time that I took to cross them. Slipping into the swamp didn't enter into my mind. Then I got the party together and we started a forced march across the swamps and up the hills to Gegende. This march was not made according to the books, because we traveled practically the same route that we took when we descended on the Jap bivouac area. There was a choice of returning by the same route or of being deep in the swamp and jungles at dark. However, there was only one point on the march which I considered a danger point and that was where a trail that led to the Jap camp ran into our trail. We passed the trail without mishap and continued on until we reached Gegende. We arrived at this village at dusk.

Before starting our trip to the beach we had left our packs in the village hidden in a house. This proved a fortunate move, because our six-mile trek back to the village was a fast one and packs would have hampered us. So far everyone had held up splendidly, but later in the evening the man from the Division complained of being sick.

After reviewing the day's events, we picked out a place to sleep. I named a guard watch and we turned in. We slept on the porch of one of the raised houses, the man on watch being stationed in a shadow just beneath us.

About an hour and a half before daybreak I called Andrew, told him to get his men up and then called my men. We put on our gear and slipped noiselessly out of the village. I do not believe the natives of the village knew when we left.

We arrived at the swamp at daylight as planned and continued up and down the hills of the government trail. The man from Division complained again of being sick and had a hard time keeping up with us. However, he made the return trip and did not hold us up very much. When he returned to the Division Headquarters the next day he was taken to the hospital with malaria.

The return trip to Aola and the hike back in the hills to the radio station was uneventful. Corporal Laverty and his party were at the radio station. They had located the bivouac area of their mission, but their reconnaissance was cut short when a group of about 10 Japs became interested in tracks left by the natives. In this bivouac area the Japs were building new shelters. They were probably moving from the area bombed the night before.

After consolidating all information I sent a message back to the Division Intelligence Officer, and then relaxed.

That afternoon a native headsman, highly trusted by the British, came up to the radio shack with his tribe. Each native brought a load of fruit for us. I had my men search their packs, but the only things that we found were two bars of "D" rations. We gave them to the tribesman and Eroni showed them how to take the paper off the candy. The natives seemed pleased with this but I was embarrassed, because it was so little in return for all the fruit that was brought.

A few minutes later the headsman and his tribe went farther back in the jungles to build a new radio shack. It was customary to move the radio shack from time to time.

In the afternoon the natives killed a young bull, and our party enjoyed the first fresh beef that we had had since we left Samoa four months before. With it we had yams, tea and some kind of cookies made from taro flour.

Before we had finished eating, a message came from Division Intelligence Officer telling the entire American party to return. The boat was to arrive at 1830. Eroni took over the radio, which communications man had already taught him to operate.

After supper we moved our gear down to Aola and put it in a house. I put a guard in each corner of the house. The natives had a fruit pool in this building which later filled half of the Higgins boat.

The Higgins boat arrived after dark about one hour late. We loaded the boat and embarked. Then the coxswain pulled out a mile from Aola beach and we anchored off a small island. We spent the night in the Higgins boat here, because it was against the policy of the Naval Operating Base to operate their boats at night except when necessary.

The next morning we returned to Kukum, and Corporal Laverty and I went up to Division to make a report of the patrol.

Sniping and Anti-sniping

By Staff Sergeant Robert Thompson (Army)

JUNGLE warfare is no more a sniper's war than it is a machine-gunner's war, a mortarman's war or a hand-grenade thrower's war. But a combat outfit without training in sniping is as helpless in the jungle as a prize fighter without a left jab and without a defense against one.

The Jap has developed his sniping tactics to the point where it is one of his most effective combat forms. There appear to be two factors in his success: (1) the use of proper equipment; and (2) the thorough integration of his sniping tactics with his other combat tactics.

It is true that you can minimize the importance of sniping by comparing the number of casualties inflicted by the Jap sniper with the number of casualties he has inflicted through other means. But such a conclusion is faulty and dangerous. The only way to judge the effectiveness of sniping is by considering it in relation to all of the Jap's other combat tactics.

Let us suppose a Jap sniper working in conjunction with a Jap machine-gun post. In one day he may not inflict more than three or four casualties, a small number in comparison with the number the machine gun tallies. And yet his observation plus the harassing nature of his fire may have made him responsible for the number of casualties the machine-gun squad inflicted. A sniper covering a route of communication may inflict only a few casualties and yet, if he has denied the use of that route to large bodies of men, his mission has certainly been successful.

If we are to successfully combat the Jap sniper we are, I believe, going to have to recognize that his tactics are, as I have shown, closely related to the other combat tactics of his outfit. However there are some direct countermeasures which can be taken against snipers. To list them briefly:

(1) *Observation.* Three or four men assigned to watch for snipers will do a better job than a full platoon assigned to the job in addition to their other duties. When it devolves on all men each is apt to become careless and think "Johnny will see him if I don't."

(2) *Anti-sniper teams.* I think the anti-sniper team should be considered a unit of company headquarters and be under the direct control of the CC. Six to twelve men should be assigned with a heavy sprinkling of noncoms. Machine-gun crews should have one or two ammunition carriers trained to spot and observe snipers.

(3) *Fire.* In an advance, any place that observation suggests may be occupied by a sniper should be judiciously sprayed with automatic fire.

Reprinted from *Infantry Journal*, December, 1943.

Last Days of the USS Quincy

By Major Warren P. Baker, USMCR

THE First Marine Division, commanded by Lieutenant General A. A. Vandegrift, shoved off from that old, familiar "Island X" on the morning of August 1 to proceed to Guadalcanal, where the outfit was to land August 7, 1942. The secret was out on the transports; all hands were informed of the coming offensive, and all hands took a new lease on life. The next few days were spent in making preparations for the landing, and the idle speculation as to what the future would hold for us.

The decks of our transport were crowded with men hungrily sharpening knives and checking their ammunition belts. Colonel J. J. Keating, Commanding Officer of the 3rd Battalion, 11th Regiment, and I prepared the maps and tentative schedule of fires for our battalion, which was to land in direct support of the 1st Regiment.

But on the morning of August 5, Colonel Keating came into my stateroom and told me that, because of my experience as a naval gunfire observer, I was to go aboard the USS *Quincy* as artillery observer to replace Captain W. T. Herring, who was ill.

The next few minutes moved quickly. I dressed, packed, and was over the side into a motor whaleboat from the *Quincy*, all in the time it takes to tell it. As we pulled away from the transport and started to buck the waves, I waved to Colonel Keating and my roommates and called the usual, "See you soon." But on that point I was sadly mistaken.

We headed for the USS *Quincy*, which, along with the rest of the convoy, was almost standing still, as the ships had slowed down to a snail's pace to effect my transfer. To me she seemed very nearly impregnable; aside from speed, the ship had nine 8-inch guns, a thick belt of armor plate around her, and the decks bristled with antiaircraft guns.

ONCE aboard the *Quincy*, I met Captain Aldridge and Captain Brilliant, who were the other two aerial observers from the 11th Regiment. They went over the radio procedure with me, and I familiarized myself with the spotting plane. I was looking forward to the moment that I would be bracing myself in its cockpit preparatory to being catapulted into space, for although I had flown often while aboard the *Ranger*, I had never experienced the catapult.

August 5 and 6 seemed to creep by even though we were all preparing for the big day. It was to be our first taste of actual battle, and the United States' first offensive action in this war. All of us were eager to be veterans. The schedule of flights for aerial spotting for the Artillery Regiment had already been made up and my turn was to come on the afternoon of August 8. Meanwhile I stood by to relieve either Aldridge or Brilliant.

The day before the landing found all in readiness—the planes were checked, gun crews given last minute instructions, and finally the captain of the ship, Captain Thomas Moore, addressed the officers and men over the loud speaker. No one who heard him could but feel confidence in the ultimate outcome of the battle, nor could any of us have failed to put forth in the best manner possible.

Reveille for August 7th was set at 0330, and "D" day found all of us up at the specified time. But the waiting on that day was different even from the preceding days. There was an air of tenseness about the ship that made a man's least move seem significant and the undercurrent of excitement was at its strongest. All hands were at their battle stations ready for the order to commence firing.

BRILLIANT, Aldridge, and I went up on the bridge in order to see everything that we possibly could, but at first a heavy mist combined with the darkness to make our view very limited. The mist was later to combine with rain and a few other elements to produce a thunderstorm that would have done credit to the eeriest murder mystery ever written.

Soon, however, we were able to make out the shores of Guadalcanal through the gloom. They appeared to be huge mountains rising out of the sea.

Just then someone reminded us that it was nearing 0600—we would strike any minute. Around the transports hovered other units of the fleet, and I began to wish that I was back with the Marines who at that moment were impatiently awaiting the order to disembark.

We started to wonder what the Japs, smugly entrenched on Guadalcanal, must be feeling to see our armada of ships coming into their waters. It was later assumed that they were unaware of our approaching attack, as the 1st Marine Division evidently took them by surprise.

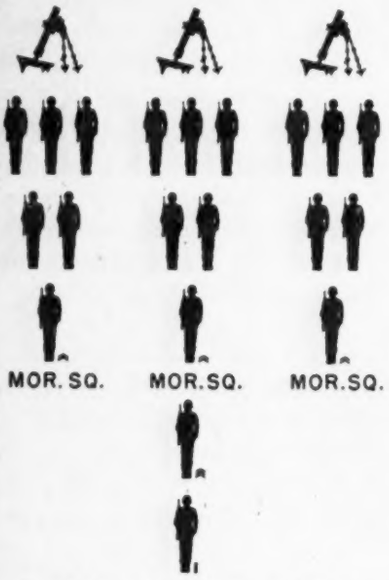
It was about 0605 that the American flag was hoisted on the *Quincy*. About ten minutes later, Lieutenant Gibson, senior aviator aboard, was catapulted. His mission was to mark the landing beach and to spot the ship's naval gunfire. A few minutes later the gun crews of our eight inchers were ordered to "commence firing."

For the next hour, tons of steel were poured into the Japanese positions, setting great fires and knocking out shore installations. Simultaneously, our carrier planes were strafing and dive-bombing the enemy positions prior to the landing of the Marines. Right ahead of us a Jap cargo ship burst into flame—it had been easy prey for one of our destroyers. Farther down the beach, we could see the *Vincennes* and the *Astoria* firing hard at the shore entrenchments.

But all this time we were wondering why the Japs didn't fire back at us. Apparently they thought that we were just going in for some routine bombardment, so they took to the hills to wait for a letup. Of course they couldn't have known that at that very moment, several thousand Marines were landing on the beaches of Guadalcanal without opposition, while 20 miles away another landing force of Marines struck stiff resistance at Tulagi. Guadalcanal Marines' turn to meet the enemy was delayed for several days after their initial landing.

The rest of that day the *Quincy*, *Vincennes*, and *Astoria* maneuvered around the channel while the transports

(Continued on page 36)



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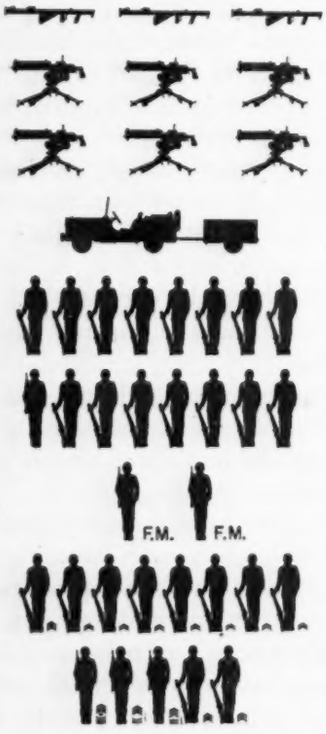
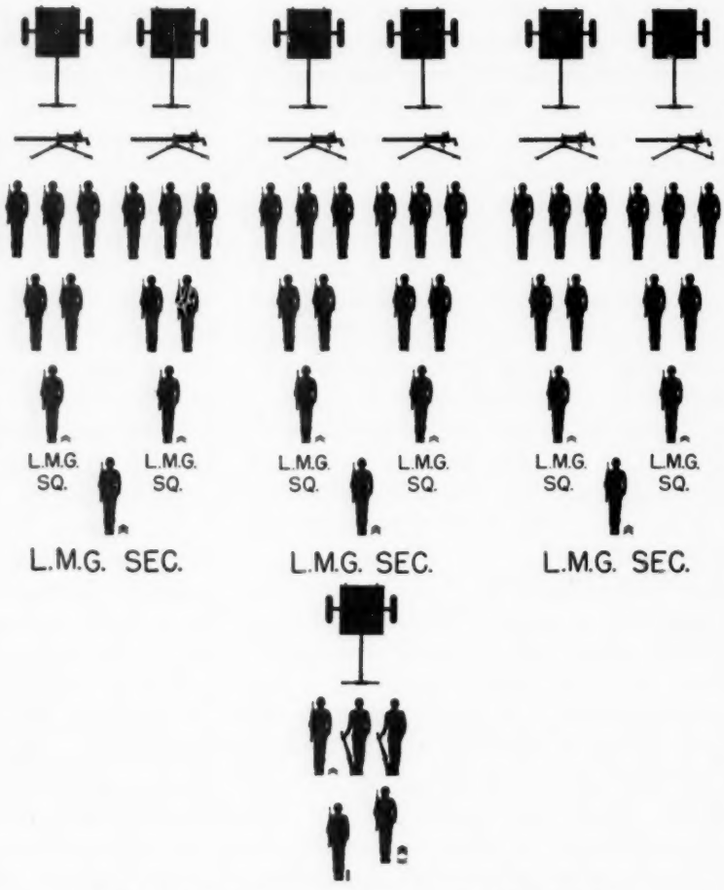


HEADQUARTERS SECTION

COMPANY HEADQUARTERS



L.M.G. SEC. L.M.G. SEC. L.M.G. SEC.

MACHINE GUN PLATOON

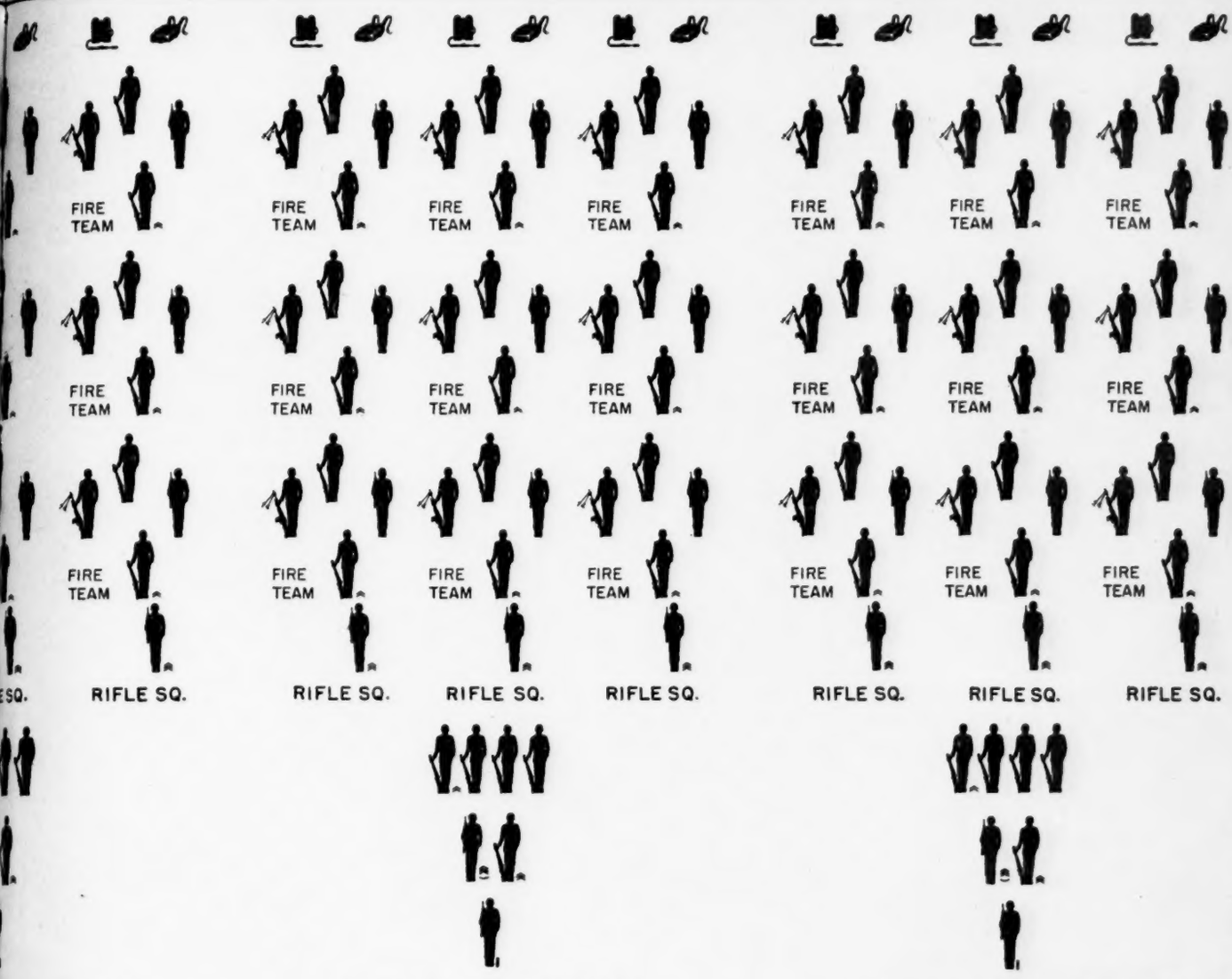
RIFLE SQ.

RIFLE PLAT

Shown here is the new approved table of organization of the Rifle Company of the Marine Infantry Battalion. One of the primary functions of this new organization is the grouping of heavy machine guns under the Company Headquarters Section. The rifle squad has been broken down into three fire teams, with a sergeant squad leader. The new table of organization includes more personnel armed with carbines. One flame thrower is available for each squad, as is one demolition kit. The antitank rocket launcher M-1 is included in the Headquarters Section of Company Headquarters.

RIFLE COMPANY—MARINE

RD 4182 A

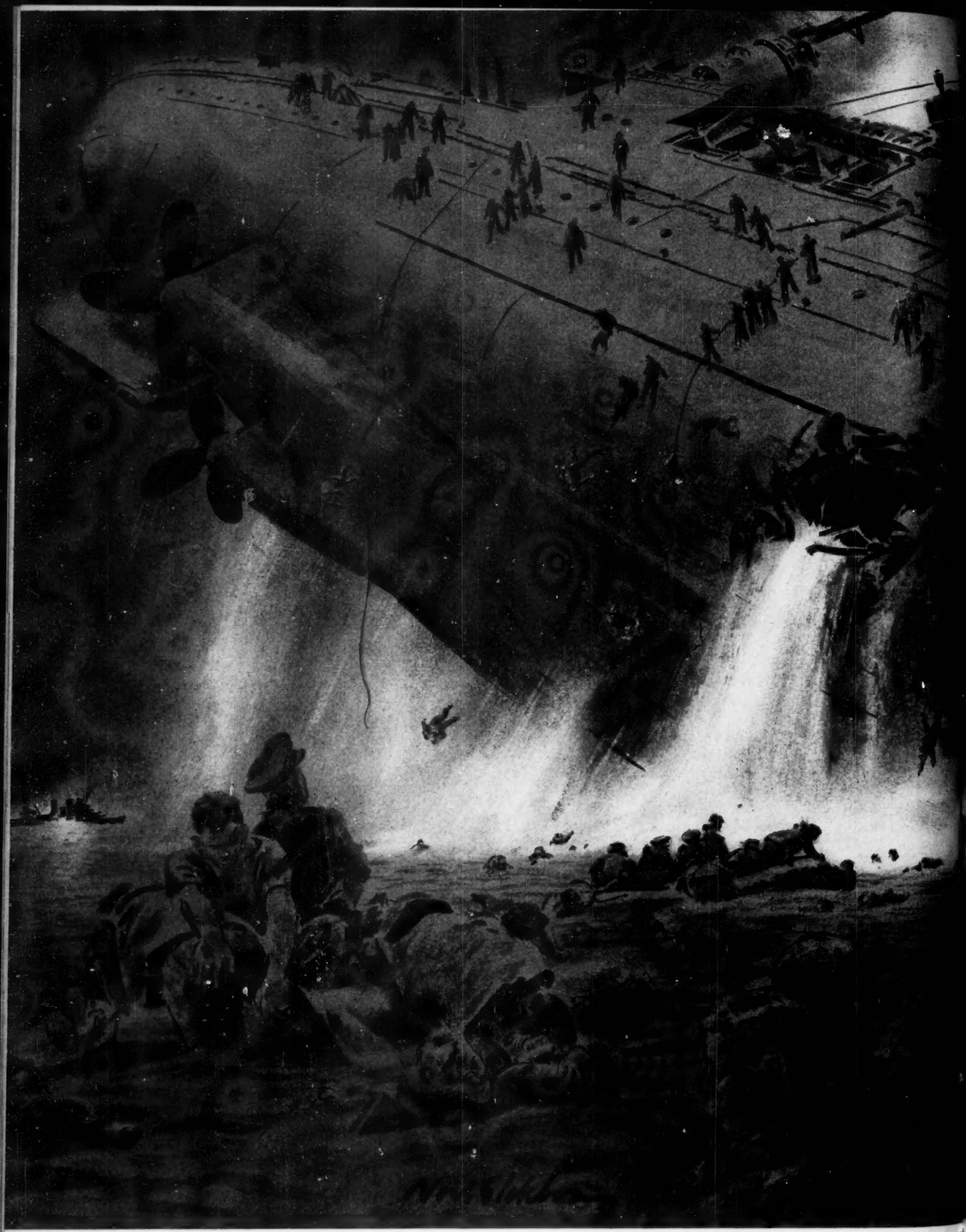


LEGEND

- Armed with M-I Rifle
- Armed with Carbine
- Armed with BAR
- L.M.G. Cal. 30
- Flame Thrower, M1A1 — One available for each squad
- H.M.G. Cal. 30
- 60 mm Mortar
- Cart
- Launcher, Rocket, AT, M1
- Demolition Kit — One available for each squad

INFANTRY BATTALION

T.O. NO. F-1
Approved: 27 Mar. 1944



On August 7, 1942, American occupation forces swept around the northern tip of Guadalcanal and split up to go to Lunga Point and Tulagi, leaving a cruiser-destroyer screen off Savo Island. On the morning of August 9, a heavy Jap force from Truk moved down between Savo and Guadalcanal, sinking the Australian cruiser Can-

berra. *Then, bending back in a hairpin around Savo, it let go with shells and torpedoes at the American screening force. When it had passed, the cruisers* Astoria, Quincy, *and* Vincennes *were on their way to the bottom. In this picture, reprinted from* Life, *the crew of the* Quincy *scrambles down her side into the oil-covered water.*

and cargo ships ferried supplies to the beaches. About noon, we had our first air-raid attack. The Japs bombed us; every bomb fortunately missed its mark with the exception of one which slightly damaged a destroyer. But the ships' gun crews had a better eye for targets and many Jap planes failed to return to their bases that night. The planes that escaped our antiaircraft fire were attacked by our covering force of carrier-based fighters.

The gun crews on the *Quincy* performed splendidly, loading and firing the 5-inch guns as rapidly as possible. The teamwork of the crews cannot be overestimated as to its importance, and as to the good results their coördination effected. Every man on the ship had the same spirit of teamwork, even to the mess attendants who had spent all the previous day preparing sandwiches for the men to take to their battle stations.

OUR first day of battle ended with the sky over Tulagi being far more vivid than the sunset as the Marines continued to attack the Japs. The results of that day were important. First, the Japanese were taken by surprise, which enabled us to gain a foothold on several of the Solomon Islands. Second, we interrupted, permanently, the intended operation of their almost completely constructed airfield on Guadalcanal, and that interruption nipped in the bud their plan of cutting off our supply line to Australia and New Zealand.

The following day, August 8, was very quiet, with the exception of a Jap torpedo bombing raid, which resulted in the destruction of almost all of their bombers that got into our area. They were Mitsubishi 97s, and our only casualty suffered was when one of the planes, while falling blazing into the sea, crashed into a transport setting it afire.

During August 7 and 8, while Aldridge and Brilliant were flying, I remained either on the bridge or in the radio shack listening to the reports coming in. I was to go up at 1500 August 8 to relieve Aldridge, but as he was preparing to come in he received orders from the 11th Regiment to secure the aerial observer until 0800 August 9. I was a little disappointed, but made arrangements to fly the first thing Sunday morning.

It was close to midnight on the 8th when I went below to turn in. For the past two days none of us had had much sleep, and I was now determined to make up for my share of it. So determined that I very nearly never got up again. In spite of the crowded conditions down in the J. O. Bunkroom on the 3rd deck amidships, I was asleep in no time.

Almost two hours later the general alarm sounded, but I thought it was the usual dawn reveille, and I decided to stay put until almost time for me to fly. Suddenly the huge water-tight door to my stateroom was slammed shut, and I could hear the sailors dogging it down. I belatedly realized that my watch hadn't stopped—it was really only 1:45 a.m. In a flash I was up pounding on the steel door. The sailors opened it, and excitedly informed me that I had better get out of there in a hurry as there was going to be an unforeseen battle. I grabbed my steel helmet and pistol and threw on my clothes, not bothering to button buttons nor to tie laces. To get up on deck, I had to push through several escape hatches as all watertight doors were secured. Ammunition handling parties were at their stations, and ammunition was already coming up from the magazines.

As soon as I got up on deck, I went to the bridge where I met Aldridge and Brilliant. An enemy plane was overhead dropping flares that illuminated the whole area. The flares were brighter than anything I have ever seen, seemingly brighter even than daylight, and they seemed to be suspended in the air, so long did they hang up in the sky.

Almost immediately the secondary battery opened fire. The portside 5-inch guns had us directly in its beam, and as our ship turned to starboard, all nine of the 8-inch guns blasted in its general direction. The searchlight went out.

By this time, the cruiser astern of us was ablaze. As its plane went up in smoke, the sky around us again lighted up so that the *Quincy* and its crew were silhouetted against the blackness of the night—perfect targets.

Just at that moment, our starboard plane was struck and burst into flames. The crew tried frantically but without success to control the fire. Then someone on the portside of the bridge yelled, "Shells are falling short about 100 yards." Another salvo landed about 75 yards away from the starboard bow, and we all realized what a straddle meant. Sure enough, from that moment on, the *Quincy* received direct hits from stem to stern.

Our 5-inch gun crews were for the most part wiped out. One of the loaders stood with a star shell in his arms, ready to seat it in the chamber of the gun when a fragment from an enemy shell hit it and set it off. The man and most of the gun crew were killed instantly. Down on the main deck unrecognizable gun crewmen were lying dead, including a battery officer whose legs were cut off at the hips.

Suddenly the ship shook violently and literally leaped out of the ocean. Two torpedoes had connected with our port bow. Then came a series of explosions and one of the forward magazines blew up, and that part of the ship was aflame.

The sound of breaking glass, of steel hitting steel, the hissing of air from the compressed air line, the explosion of countless shells and the pitiful cries of the wounded all merged into one, and seemed to shout the doom of the *Quincy*.

In the space of thirty minutes the captain, executive officer, navigator, and countless others on the ship had been killed, as the pilot house on the bridge had received several direct hits on the starboard side. So far as is known, we three Marines were the only ones who survived the bridge, as we were on the portside.

AS the flames began to lick at the bridge, Aldridge, Brilliant and I became separated. The flames blocked our exit to the main deck and the powder gas was so strong that we choked. My lungs seemed full of the stuff, but I finally managed to get down the small ladder at the end of the signal bridge.

Down on the main deck, the smoke wasn't as bad, but the sight of our men lying wounded and dead was ten times worse. I saw the radio crew and they knew we had been hit seriously as all of the radios had been destroyed, but were unaware of the ship's real distress. So was I at that point, although the ship began to list badly to port. I

walked out on the main deck and saw that survivors were in the water clinging to life nets.

When I realized that the ship, still burning furiously, could never be righted, and was in fact rapidly sinking, I proceeded to acquire a life jacket with all possible haste. By the time I was ready to leave the ship, the normally vertical splinter shields around the five-inch guns were then within a few degrees of being horizontal.

I climbed up on one of them, removed my shoes, and placed them carefully together on the steel plating. But my helmet, pistol and flashlight were still with me when a life-net floated by and I jumped in. I no sooner reached the net than other survivors began to yell to get away from the ship so that we wouldn't be sucked under when she went down. A few minutes later the *Quincy* started down, and to our surprise we were pushed farther away from it instead of being pulled down.

I turned to watch the *Quincy* sink—her bow was down and her stem stuck out of the ocean. The propellers were still turning as she submerged. I looked at my watch, and it was just 0235, an hour after I almost didn't get up for "reveille."

Many fine men went down with a fine ship, and we who survived were thankful that, for the moment at least, we had our own problems that demanded attention: helping the wounded to be as comfortable as possible in the oily sea.

Men without life rafts clung to aluminum shell cases which were a very satisfactory substitute. About twenty of us banded together around rafts, figuring that we would make out better in this manner as we were going to head for Savo Island, three miles distant. Just to make our navigation problem more difficult, the paddles which are normally a part of life raft equipment were just pieces of charred wood.

We broke the first aid kit, and some of the more severely wounded men, with arms or legs missing, were given morphine injections. A man, even though it isn't worth much, instinctively clings to his life, so the wounded were cared for insofar as was possible. Incidently, it was raining, thundering and lightning that night which didn't help us in any way. Soon we gave up heading for Savo Island as the tide was too strong, and we were being swept farther out to sea.

SUDDENLY a vague but massive shape loomed nearby, and some of the men started yelling, hoping that it was one of our destroyers. Commander Harry Heneberger, senior survivor and Gunnery Officer of the *Quincy*, quieted the men down by telling them that it could very easily be a Jap ship. Just then a flash of lightning illumined it partly, and it certainly did appear to be an enemy destroyer because of its strange looking smoke stacks.

Quite a distance from us we saw the *Astoria* and the *Vincennes* still burning fiercely. Although the *Quincy* was, by that time, on the bottom, we could still feel the vibrations from incessant explosions.

Soon we had been in the water for two and a half hours; and as dawn began to break, we began to be anxious about the possibility of more Japanese ships being in the vicinity, as we were still able to hear the rumbling of guns in the distance. Shortly thereafter, we were able to see a ship that not only looked like one of the U. S. construction, but also appeared to be picking up survivors. I still had my flashlight with me, having fastened it to the pocket on the life jacket, and the sky was still black enough so that after shaking the water out of the light, I was able to flash an S.O.S. to the ship. To our surprise and happiness, the ship acknowledged the signal immediately with their blinker. That incident seemed to change our whole outlook, and it is almost impossible to describe the feeling that we all had at that moment.

In a few minutes a destroyer came alongside, hoisted us aboard, and we were taken below deck, where the wounded were tended and the rest of us were given hot coffee and dry clothes by the sailors. While we were resting in the compartment, the all too familiar general quarters alarm sounded, and the sailors rushed for their battle stations. "Here we go again," was our immediate reaction, and as the ship opened fire, everything below deck started to shake. There were about sixty of us in the small compartment, and all we could do was wait for the outcome whatever it would be.

One of the men remarked, "The Japs will get us yet." It was very reassuring to hear someone answer back, "They will like hell!"

FINALLY the firing ceased, and we were told that an unidentified ship had caused all the excitement. Then our ship stopped next to one of our transports and we were taken aboard and sailed that day for an island base. There on the transport, I once again met Aldridge and Brilliant—we were all amazed to find each other very much alive. When we arrived at our destination, the three of us were reëquipped and sailed a week later to rejoin the 11th Regiment on Guadalcanal. But that's another story that could be called "Out of the Frying Pan and Into the Fire."

"Much as I approve of strict obedience to orders, even to a court-martial to enquire whether the object justifies the measure—yet to say that an officer is never, for any object, to alter his orders is what I cannot comprehend. The circumstances of this war so often vary, that an officer has almost every moment to consider—what would my superiors direct did they know what is passing under my nose?"—Lord Nelson to Lord Spencer, 6 November 1799.

Jungle Warfare

"Before the infantrymen can overcome the enemy they must overcome the jungle."

THIS article has been compiled by the Marine Corps Schools, Quantico, Va., and is "based on the experiences of many Marines of all ranks who have fought in the jungles of the Philippines, Guadalcanal, New Georgia, Bougainville, Choiseul, and New Britain." Thus it contains a distillation of the best knowledge of this type of warfare, gained the hard way in the islands of the Pacific, and should be of inestimable value to other Marines who may be called upon to live and fight under similar circumstances.

THE jungle fighting in which we have participated in this war has for the most part taken place in the coastal areas of the South Pacific Islands. Our objectives have been the seizure of airfields or of sites suitable for development as bases for further operations of our ground forces and our air and naval craft.

During the first two years of war New Guinea has been the only area in which we have fought in the mountain jungles. However, the terrain difficulties and the character of vegetation place similar restrictions on military operations regardless of whether they are carried out in the coastal jungles or in hilly, rolling or mountainous country.

While operating in coastal regions of a tropical island, several sorts of terrain and vegetation will be encountered. There are cultivated areas largely given over to coconut plantations. These generally have a few fair coral tracks running through them. The tracks are of crushed coral and are from six to eight feet wide. Movement and visibility in the plantations are normal. The fronds of the trees give partial concealment from air observers. Airfields are easy to construct on the site of coconut groves for the ground is quite flat. (Henderson and several other fields on Guadalcanal as well as Munda on New Georgia were formerly small parts of large coconut plantations.)

The coastal shores, the lagoons, and the inlets are often fringed to varying depths inland with dense mangrove, the roots of which are covered at high tide. The twisting roots, the mud, the coral outcroppings and the maze of low branches make such areas very difficult and dangerous to traverse. Landing against a mangrove shore with personnel boats is not a feasible undertaking for large forces. Even if it were, it would be most difficult for units to get through the mangrove and still retain any semblance of order or the ability to fight as organizations.

Inland from the mangrove swamps, the coconut groves and the stretches of jungle that fringe the coast line, there are often found, before the foothills are reached, relatively level meadows of kunai grass. This is a strong, coarse, thick grass that may be anywhere from three to nine feet in height. While crossing a patch of kunai grass progress is slow and laborious and movements of the grass betray one's presence to enemy air observers or to enemy observers perched in trees at the edge of the jungle surrounding the grassy areas. Passage across kunai fields in the daylight is always to be avoided.

As one progresses still farther inland he finds precipitous razor-backed coral or volcanic ridges, sparsely covered with vegetation, rising toward the mountains. Because of the precarious footing these ridges are difficult to negotiate. They offer neither cover nor concealment.

The three types of growth mentioned cover the smaller part of a jungle island. The remainder of the island will usually be covered with a very heavy jungle growth in which there will be found vegetation of all types and trees of all sizes. When the growth permits light to get through, tangle of bush will be impenetrable, and cutting will be necessary off trails or tracks. The growth is particularly heavy in valleys and tends to thin out as the elevation increases. This is uncut, virgin or primary jungle. In some places, the trees may reach heights of eighty, ninety or one hundred feet or more and a complete leaf canopy prevents the sun from striking the ground. This is "rain forest." The undergrowth is thin and an ordinary hunting knife will suffice to cut the occasional vines and creepers that may be in the way.

FREQUENTLY in the jungle there are large swampy areas, and the low lying ground is always muddy. The swamps may be from ankle to thigh deep. Usually they are about knee deep and the mud is very heavy and thick.

If a patrol were to cover a march through the types of terrain that have been described, it might start with an hour of easy going along a smooth coral track that runs through a coconut grove. After passing through the coconut grove, the patrol might be required to go inland for some distance. Perhaps for half an hour the patrol forces its way through kunai grass that is over the heads of the men; it then climbs one or two precipitous and slippery coral ridges that lie across its route; next, it descends into a jungle—a solid wall of undergrowth, vines and creepers. (All jungle vines have one attribute in common—nature has equipped them with thorns that tear the skin and rip the clothes). Perhaps it takes an hour to cut through three hundred yards of this. Next the patrol comes to a swamp about five hundred yards in width and from calf to knee deep; after negotiating this muck comes a short tour of about half a mile through the mangroves that border the lagoon which is the patrol's destination. The patrol may cover three and one-half miles in five hours. The first two and one-half miles of the distance were probably done in about an hour over the coral track. Consequently, for the last four hours of its trip the patrol has averaged no better than a quarter of a mile an hour.

During its march the patrol has not been moving through atmosphere that is air conditioned. It may have started out

in the morning under a hot sun blazing in a perfectly clear sky but it will in all likelihood march the last half hour toward its destination in a torrential downpour.

It should be obvious from this brief description that terrain and weather are determining factors in jungle warfare. They combine to limit the movement of foot troops and to make the movement of tracked and wheeled vehicles impossible except on roads and tracks.

The effects of the heat, the perennial dampness and the rain on the health of the individual must be taken into account. Malarial mosquitoes, dysentery and tropical ulcers are ever present dangers. Heat prostrations and cases of sheer physical exhaustion are common. Loss of weight due to unusual exertion and dietary deficiencies must be expected.

The Effect of the Jungle on Operations

ALL movement in the jungle is calculated in terms of time rather than distance. The problem is how long it will take to get from A to B rather than how many miles it is between those places. Mileage is purely an academic consideration.

Because of poor trails or the complete lack of them, difficult terrain and mud, the movement of troops on foot is slow. Generally there can be no movement of tracked or wheeled vehicles larger than the one quarter ton truck until the engineers have improved tracks and trails.

Flank security elements cannot be expected to maintain a normal rate of march when operating off trails in thick jungle. They will be required to cut and will not be able to keep pace with elements moving on a trail. When flank security is essential (as it is when contact is probable) the security groups will have to cut continuously. They can expect an average progress of about a quarter of a mile an hour. The position and rate of advance of flank groups can be determined by the noise of their cutting or by periodically sending out small patrols to contact them. The necessity for frequent relief of flank security detachments will occasion frequent halts.

Supporting weapons and their ammunition cannot be moved over jungle trails at the same speed as that at which ground troops move. If artillery is required to move over trails to support jungle operations the speed of troop movement must conform to the speed at which artillery can be manhandled or packed, otherwise the foot columns will soon leave this supporting weapon far to the rear.

The movement of tanks is seldom possible in heavy jungle unless they can move over prepared routes. They may be used to advantage where terrain permits their free movement. Normally they are restricted to coconut groves, beaches, grass covered fields, tracks or improved trails. When operating under these conditions they are vulnerable targets for well organized antitank defenses. When tanks are used they must be closely supported by foot troops to protect them from enemy tank destroyer parties.

Primary sources of supply may be by air drop, by Marine carrying parties, or by boat or canoe. These means may also have to be used in the evacuation of our wounded. All of them have been used in the past very satisfactorily.

The efficiency of the air arm in direct support of ground troops is strictly curtailed. The complete leaf canopy prevents pilots from seeing troops on the ground; the troops are often unable to catch more than fleeting glimpses of the planes. Pilots cannot see panels laid out on the ground; it is often impossible for them to see panels or strips displayed in the tops of trees. Colored smoke pots placed on the ground have been used to indicate the position of ground troops but the rapid diffusion of the smoke renders them impractical. Smoke pots or smoke grenades to which lines are attached may be thrown into trees. There is now available a "tree top" smoke grenade which is believed to be satisfactory.

Artillery in support of ground troops is seriously handicapped by lack of observation. In the jungle the artillery habitually uses forward observers to control supporting fires. The forward observer teams conduct fire from most advanced positions. They may be in trees or prone on the ground. They sometimes are unable to see the bursts. In such a situation they control the fire by sound spotting or sensing; that is, they bring the impact area to the target area by sound. Sound sensing is an expedient. When registration by high burst, W. P., or other visual means is possible, these means are preferable. Artillery can and does fire unobserved fires from maps or air photos. Artillery, firing unobserved fires, the data for which was based on maps or photo maps, rendered effective support on several occasions on Guadalcanal.

The fire of heavy mortars is controlled in a manner similar to that described for the artillery.

Light mortars will always be used provided there is a gap in the canopy overhead. If there is no gap and one cannot be cut, it may have to be created by firing into the canopy using super quick fuze. This is exceedingly dangerous to our own personnel, but it has been done in cases of emergency.

Difficult terrain, the almost complete lack of roads, trails and bridges, restricted visibility, and bad weather all directly effect the control that can be exercised by a leader over his units.

Parallel movement of the various elements of a command in thick jungle is most difficult. Parallel trails with occasional lateral connecting trails do not exist.

A JUNGLE march from point to point will in almost every instance be made over a single trail in a column of files. In concrete terms, if a battalion of 800 men moved with three yards of distance between men, it will take up almost a mile and a half of trail space. Wire has been strung on the march, units clipping in with telephones at each halt. The necessity for radio silence bans the use of radios. Even if radio silence has been lifted the dense foliage and the irregularity of the terrain make communication by ultra-portable radio unsatisfactory. The same conditions make control by semaphore impractical. Exercise of control by passing "the word" is slow and even in small and well-trained commands is subject to error. Runners are the most practical means of communication but it is a real task for a runner to get from the middle of a moving column to its head.

It is no particular problem for a runner to move two

(Continued on page 61)

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SEMPER FIDELIS

THE MARINE CORPS GAZETTE

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Admiral Ernest J. King, commander in chief, U. S. Fleet, and chief of Naval operations, in his official report covering combat operation up to March 1, sums up the war situation to date so well that the editors of the GAZETTE *herewith reprint his report's conclusion:*

WE can look back with satisfaction on the progress of the war to date, and with just pride in the part played therein by the United States.

In the European theater, our forces have taken part in driving the enemy out of Africa, and have shared in the occupation of Sicily and in the invasion of Italy, which resulted in its capitulation. The Russian army, turning against the Germans in an irresistible offensive has driven them back to the borders of Poland and Rumania. France has been given new hope. Instead of being a daily target for the German air forces, Great Britain has become a base for an air offensive against the heart of the Axis on a scale which dwarfs the greatest German attacks of the war. The German submarine fleet has been reduced from a menace to a problem. The encirclement of Germany is in sight.

As of March 1, 1944, the situation in the European theater is increasingly desperate for the Axis and correspondingly encouraging for us.

The German structure of satellite states is crumbling. Italy has fallen and is a battlefield in which 20 German divisions are taking heavy punishment. Rumania, Bulgaria, Hungary and Finland are weakening. The Balkans are aflame with guerrilla war, and other occupied countries wait only the signal.

The Russian armies continue to advance, as massive invasion threatens in the West, and with all this, Germany is scientifically and remorselessly being bombed on a scale whose magnitude and increasing tempo have flattened her cities, wrecked her factories, and cannot but be a major factor in her eventual collapse.

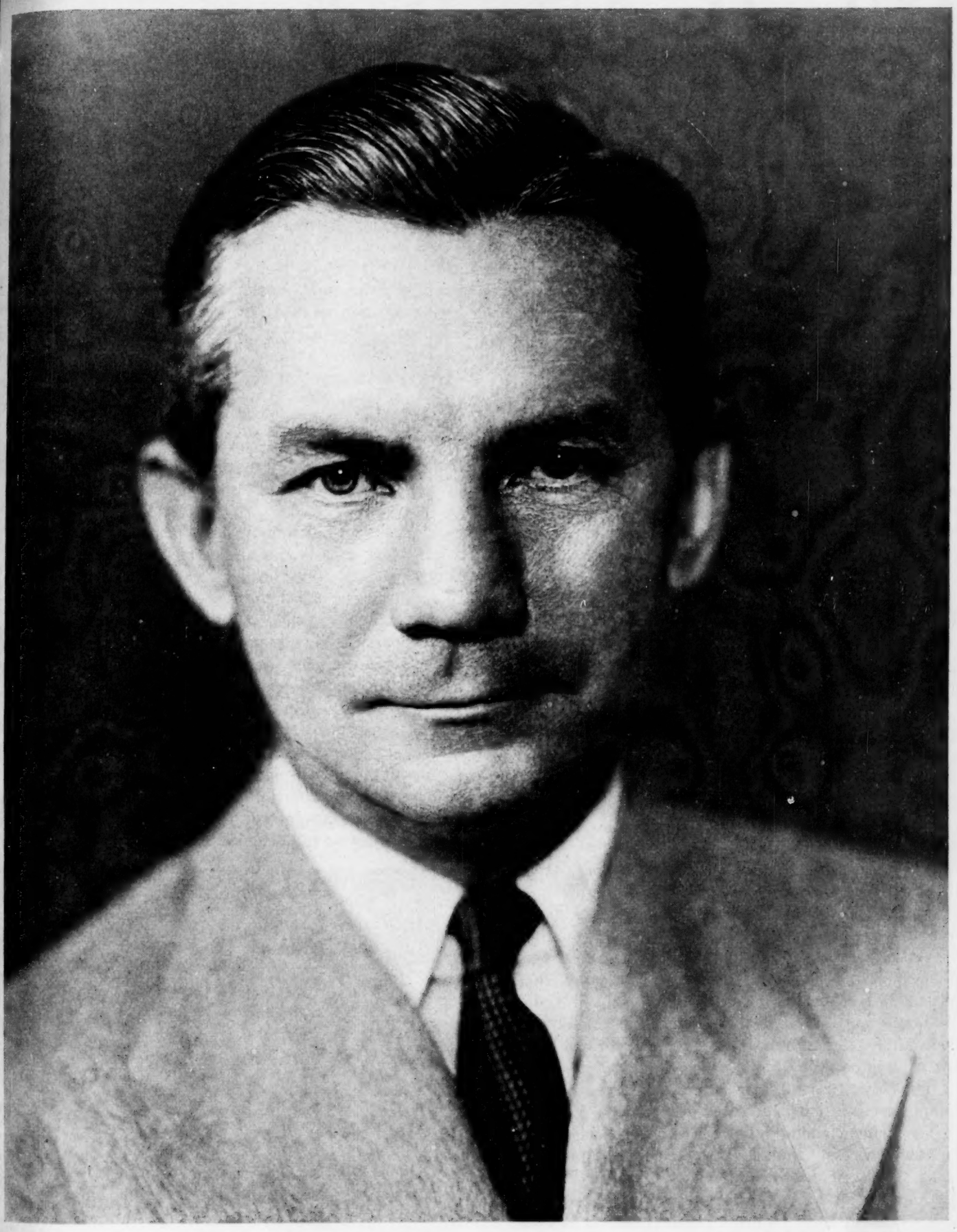
IN the Pacific theater, the Japanese, after their attack on Pearl Harbor, advanced with impressive speed and power through the Philippines and the Netherlands East Indies into the Solomon Islands, in the general direction of Australia and New Zealand. Following these successful advances, they effected landings in the Aleutian Islands and attacked Midway. The Japanese advance was checked, however, almost as abruptly as it had begun. Our successes in the Solomons, in the Central Pacific, and in the Northern Pacific, are now matters of record, and we have had time to build up our strength, and to test our power. Our outposts, which two years ago were on a line running from Dutch Harbor in the Aleutians to Midway, thence to Fiji, Samoa, and Australia, now begin at Attu, on the top of the Aleutians, and extends south through the Marshall Islands to the Bismarcks and New Guinea.

Through experience, we have mastered and improved the technique of amphibious operations, in which the Japanese were so proficient in the early days of the war. Our Army and Navy forces have learned how to fight as one team. We have learned how to make the most of what we have, but it is no longer necessary to ask our commanders to get along as best they can on inadequate means. The numerical inferiorities which were so pronounced in the Java Sea campaign, and in subsequent actions in the Solomons have been reversed. Our submarines and planes are cutting deeper and deeper into the vital Japanese shipping, and our fleets move in the Central Pacific unchallenged.

The war against Japan has gone increasingly well of late. From their posts of maximum advance in the Pacific, the Japanese have been driven back progressively by a series of offensive operations. Important as our own advances toward Japan are, they do not fully represent the improvement in our position. Japanese capacity to maintain the war at sea and in her advanced areas has suffered increasingly, due to the loss of vital shipping, while the growth of our power in the Pacific enables us to threaten attack on the Marianas and Carolines and Kuriles, which may be called the intermediate zone of defense of the Empire.

JAPAN will not be directly under attack as Germany is now, until the citadel area of that empire, island and continental, is under our threat or control, but the current and prospective circumstances in the Pacific Theater present a situation which must be as dark and threatening to Japan as it is full of promise to us.

Both in Europe and in the Pacific, long roads still lie ahead. But we are now fully entered on those roads, fortified with unity, power, and experience, imbued with confidence and determined to travel far and fast to victory.



James Forrestal, 48th Secretary of the Navy, took the oath of office May 19, 1944. He succeeds the late Frank Knox, who died April 28.

What's New?

Recent Developments in Aircraft, Weapons, Materiel, and Related Military Fields

Aircraft

Aerodynamic and propulsion engineers concentrated on further development of the jet-propelled plane, following announcement of successful flights by what is said to be a super-speed craft built by Bell Aircraft Corporation and General Electric. GE constructed in this country a British Whipple engine, consisting of a high-speed, blower-type, rotary compressor and a single-rotor turbine, mounted in tandem in a cylindrical chamber. Air is taken into the chamber through a frontal intake leading to the compressor. Thence, air flows to a heating chamber fired by kerosene or other fuel, and the gas and air mixture then enters the discharge conduit, where the turbine is shafted to the compressor. Exhausting the energy of the heated air at high velocity through a rear orifice develops the considerable forward thrust required. Bell Aircraft was given the task of designing and building a high-performance plane to be powered by two such jet engines. The magazine

The new Navy Conestoga loads 10,400 pounds of cargo. Trap door lets down at upslung part of fuselage for easy loading.

Aviation envisions this still highly secret design as similar in appearance to the P-39 Aircobra.

Meanwhile, Douglas Aircraft Co. issued a flight and propulsion chart showing that jet-powering would be required to permit planes to develop speeds in excess of 500 miles per hour. According to Douglas, propeller efficiency at 50,000 feet reaches maximum speed somewhat short of 500 miles an hour. The chart claims that reaching higher velocities with conventional, propeller driven ships is virtually impossible.

The Navy, through Rear Admiral D. C. Ramsey, has announced perfection and first use of a new Wildcat light fighter plane, claiming it to be the best of its class throughout our services. Manufactured by General Motors, the new craft, successor to the original Grumman Wildcat, is powered by a new Wright engine using forged instead of cast cylinder heads. It has a faster climb, much shorter take-off, and lower landing speed.

American Aviation, Inc. announced addition of ten 50-caliber machine guns to the B-25 Billy Mitchell bomber, making it the heaviest armed ship in the world.

War Production Board and Reconstruction Finance Corporation jointly authorized Howard Hughes and Henry J. Kaiser to complete their experimental plywood sky-freighter. Work had been ordered halted after $10,000,000 was spent on the project.

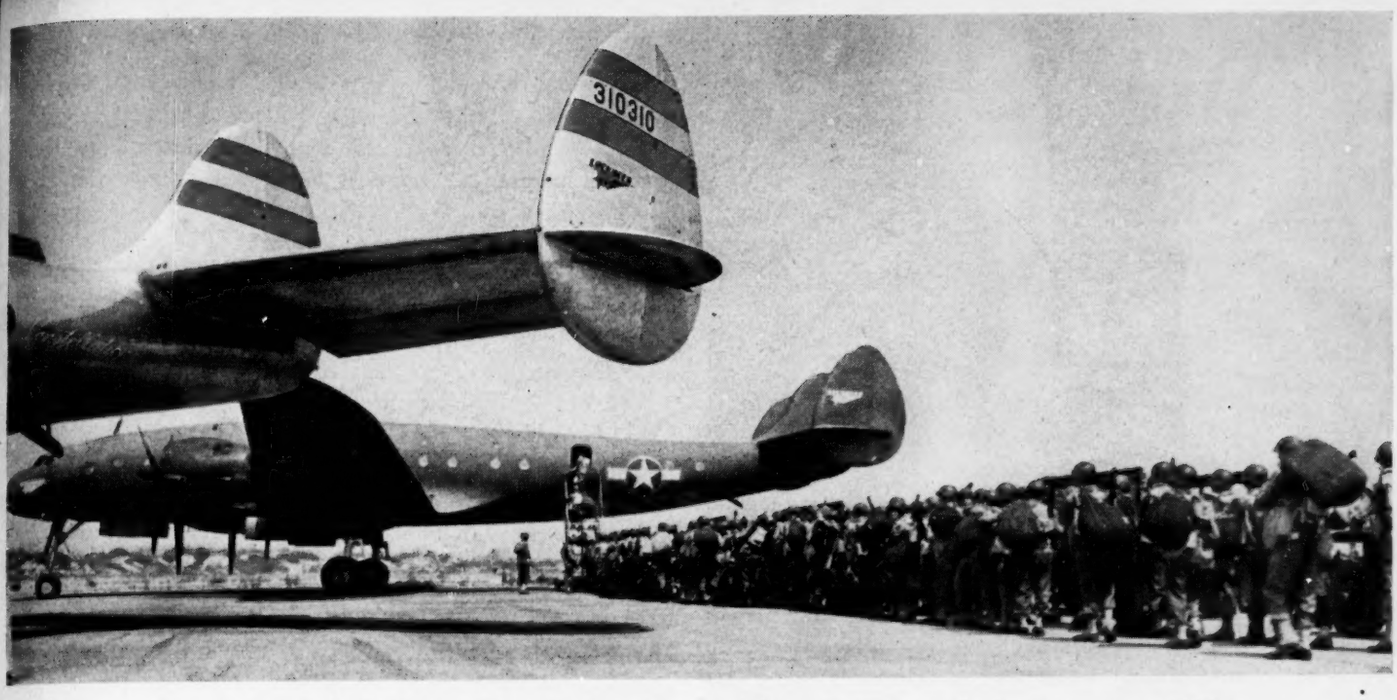
The Army announced completion of successful flight tests of a training plane, basic type, equipped with glass-reinforced plastic fuselage, side panels, and tail cone. The air forces matériel command at Wright Field, Dayton, O. had been working on the plastic for many months. As now perfected, the fuselage is of "sandwich" construction–a balsa-wood core between two skins of plastic reinforced with fibrous glass cloth. The Army announcement said this new material, on a strength-weight basis, is 50 per cent stronger than metal and 80 per cent stronger than wood.

Britain began first use in combat of its new Fairey Barracuda, combination dive and torpedo bomber. Now in service with the Royal Navy, this powerful new entry features an unusual tail assembly in which the elevators are perched high above the tail cone, close to the top of the single rudder.

The German Luftwaffe released pictures, via Sweden, of a new craft described as an "asymetrical plane, Bv 141." A single engine affair, the propulsion machinery is mounted in a thin, cigar-shaped fuselage, slightly off-center. There is only one tail elevator, on the left side, which also is the off-center side. The cockpit is said to balance the fuselage and is about the same size as the normal engine mount on a two-motor bomber. Special advantages supposed to result from this departure in design are not given.

The Department of Agriculture's regional research laboratory at Peoria, Illinois announced perfection of a method for blasting carbon from airplane engines with corn cobs. The research was undertaken at request of the Navy, which sought a substitute for corn grits, formerly used to clean carbon and grime from engines without harming the metal.

Fourteen .50 caliber machine guns and a 75mm. cannon give this B-25 the world's most powerful aircraft fire power. To its normal armament have been added four new "package guns" outside and just below the pilot's compartment.



Troops board the Lockheed Constellation. Gross weight — 80,000 pounds; horsepower — 8,800.

This was too expensive both of money and of scarce corn. The laboratory, after experimenting with rice hulls and peanut shells, found cobs, ground fine, did the best job.

In the civilian fields, postwar aviation was divided about evenly between more conferences on international airways and development of faster, bigger planes. Transcontinental & Western Air, Inc. flew its newest development, the Lockheed Constellation, 64-passenger air giant, which shattered all transcontinental records (less than seven hours), and forecast its everyday use by next year. Consolidated Vultee Aircraft Corporation looked further into the future with model of a 400-passenger ocean air cruiser designed to fly non-stop New York to London and/or continental airfields Model 37 would be powered by six huge pusher engines set in a 200-foot wing.

Ordnance

The Congress rushed through a $35,000,000 appropriation for expanded manufacture of rocket guns for the Army and Navy. These were first officially revealed as actually in use on landing craft and otherwise by the late Navy Secretary Frank Knox, just before his death. Rear Admiral George S. Hussey, chief of Naval Ordnance, later disclosed that many new types of rocket guns are being developed. For reasons of security, no details are available. It is planned that $15,000,000 of $65,000,000 asked for new Naval ordnance will be used for rocket weapons, along with $20,000,000 already set aside for the purpose by the Army. Admiral Hussey did say he doubted rockets will ever replace rifled guns on warships because the rockets are comparatively inaccurate.

Successful tests on a new long-range mobile artillery piece, designed to out-fire the German 170mm, were announced by the Army at its Aberdeen, Md. proving ground. The new American weapon is an 8-inch (200mm) piece and will fire a projectile nearly twice as heavy as that of the Nazi 170, throwing it two miles farther than the enemy gun.

Nazi air raid patrols began use of a sound amplification device for use in bombed buildings to determine the slightest sound of life under wreckage wrought by American-British air attacks.

John C. Garand, M-1 rifle designer, took out a new patent, assigning rights to the government, covering a testing device for measuring powder pressure in the rifle bore. Firing a test rifle equipped with the Garand device registers muzzle pressure and aids in determining performance of various types of cartridges.

Army Ordnance Department officially announced effective use of a new, powerful, high explosive called PETN —short for the chemical name: penta-erythritol-tetranitrate. One-third more explosive than TNT, the new matériel was discovered first in World War I, but proved too sensitive. Now, by combining PETN with TNT, a combination has been achieved for use in all general purpose aircraft bombs and for such armament as 105mm howitzer shells.

British Admiralty released details of almost fantastic use of torpedoes—two-man crews riding them through Palermo harbor and destroying an Italian cruiser and a large transport. Battery-powered, these are projectiles on which an officer and an enlisted man, in diving suits, sit astride and travel under water to the enemy vessel. There a "war head," explosive charge equipped with time fuse, is attached to the vessel and the "sea cowboys" speed away. All four of the men who sank the Italian ships in 1943 at Palermo were captured.

Vessels

High-speed lighters designed to unload cargo vessels at rendezvous far from shore and equipped to resist submarine attack have been patented by Andrew J. Higgins' New Orleans designers. Featured are two fast, semi-PT boats slung aboard in cradles on the afterdeck. These boats can be slipped into the sea down the lighter's transom to engage submarines with depth charges, light cannon, and machine guns.

New system for building Navy destroyer escorts was perfected from designs by Harry J. Defoe, one-time school teacher. The 700-ton vessels are constructed upside down, permitting down-hand welding to save time and expense.

The U. S. Coast Guard adds the helicopter to its rescue equipment.

When completed, the hull swings on giant steel wheels which roll it over into upright position for launching.

Army Air Forces launched a new air-seas rescue boat, 85-feet over-all, with 45-knot top speed. Army claims the craft is faster than Navy's PT boats, which it resembles. She starts and stops unusually quick and can make a 90-degree turn within her own length. Manned by thirteen seamen, the vessel is equipped below decks with twenty bunks for casualties and carries fuel for a 2500-mile cruising range. Army has 100 such boats now.

New, non-magnetic, lightweight invasion gyrocompass, only nineteen inches in diameter is now in use on small naval craft, the Navy Department announced. Particularly adaptable for use in landing craft, it is described as the only small gyrocompass in the world. It indicates true north regardless of the magnetic conditions set up by tanks, trucks, or other cargo aboard the vessel.

Other Items

Army has perfected a 280-acre proving ground for testing tanks and other new matériel at Aberdeen, Md. Claimed to be the toughest outdoor laboratory, the standard tour is 400 hours for a General Sherman tank or an M-10 gun carriage.

Walter Kidde & Co., Bloomfield, N. J., have perfected for tank engine fire control an adaptation of their equipment in use by U. S. fighter and bomber planes. A tank-fire detector—an electric switch held open by two organic filaments—flashes a red light on the tank's instrument panel. Tank operators simply pulls a lever, releasing carbon dioxide under 850-pound per square inch pressure through a series of nozzles spotted throughout the engine compartment. The dioxide takes only a few seconds to remove all oxygen from the air, halting the fire.

American tanks now use in the driving sight a peephole lens so small the enemy can't shoot it out, yet ground to give the tank driver unusually wide and protected vision.

Five St. Louis Medical School scientists have been awarded patent on Vitamin K, antibleeding compound, which when commercially in production, may provide another means to reduce battle deaths. The name Vitamin K is used only for convenience; actually the successfully isolated compound is 2-methyl-3-phytyl-1, 4-naphthoquinone. It can be obtained from plant substances such as alfalfa, or made synthetically from coal tar.

For nearly fifty years of effort have culminated in success for Polaroid Corporation scientists in the perfection of synthetic quinine. Definitely regarded by its discoverers as fully equal in antimalarial qualities to the drug extracted from bark of cinchona trees, commercial production is planned to relieve the shortage of quinine since Japan seized the Netherlands East Indies. Even though large scale output may not be achieved during this war, Polaroid maintains that discovery provides the United States with insurance against future dependence on the Pacific area for the essential drug, an important factor since death statistics show malaria the greatest single disease-cause.

Farragut, Idaho, naval training station has reported 85 per cent prevention of respiratory disease due to bacteria through daily use of two tablets of sulfadiazine by every officer, enlisted man and civilian employee on the base. The prevention covers scarlet fever, acute tonsillitis, meningitis, mastoilitis, rheumatic fever, some forms of pneumonia, and other respiratory troubles. It is the first large-scale use of a sulfa drug in this manner, the training unit reports. While the common cold, not a bacteria infection, is not prevented by sulfadiazine, many of the complications stemming from colds are prevented by use of the drug.

The new Landing Ship Medium (LSM) is smaller than the LST and larger than the LCT.

Training Junior Officers

The Infantry Leaders' School at New River

By Captain Seth M. Fitchet, USMC

ALL too often in our reports from the infantry units in the combat zones we see, "Send us trained junior officers." This problem, arising from the rapid expansion of the Marine Corps, is being solved at the Training Center of Camp Lejeune, N. C., in the Infantry Leader-Instructor School.

On the premise that a good leader must be a good instructor and a master of his field, Major General Henry L. Larsen, Commanding General, Camp Lejeune, set about to organize the Infantry Leader-Instructor School last August, and selected Major Angus M. Fraser as officer-in-charge. A staff of instructors, each an expert in his field, was assembled from the combat zones and other branches of the Marine Corps, to give the students the benefit of combat experience and a complete knowledge of the book. The school was designed to produce leader-instructors, trained, not only to be experts in their specialties, whether it be machine gun, mortar, or scout-snipers, but what is more important, to be capable instructors. Thus it follows that the two terms are practically synonymous for military training.

The school contains the following classes:

(a) Rifle Platoon Class
(b) Rifle Company Weapons Platoon Class (60mm. mortar and light MG)
(c) Machine Gun Platoon Class (Hv BMG cal. .30)

Photo by Corporal Ted Hayman

Colonel Victor F. Bleasdale, Chief-of-Staff of the Camp Lejeune Training Center, demonstrates to a machine gun weapon class how effective "flanking fire" may be laid down to "pin down" the enemy while troops charge in from the flanks for the kill. Colonel Bleasdale doesn't hesitate to become the subject of holding the target and marching forward while the machine gun spits forth its stream of steel. Major Angus M. Fraser, officer-in-charge of the schools, is shown firing the gun.

Photo by Corporal Ted Hayman

The rugged combat course of the Camp Lejeune Training Center's Infantry Leader-Instructor Schools gives Marines a taste of real combat conditions. The above scene shows a Marine taking cover after running into a surprise "mortar concentration." Only two of the five land mines are shown exploding in this picture.

(d) 81mm. Mortar Platoon Class
(e) Scout-Sniper Instructor Class
(f) Bayonet and Physical Instructors Class

The student body is made up of officers and noncommissioned officers who are expected to train and lead men in combat. The majority of them go into Replacement Battalions where they organize and train platoons of recruits. "These students," says Colonel Victor F. Bleasdale, who was until recently the Chief-of-Staff of the Training Center, "are not being trained as regimental or battalion commanders, but when they graduate, they will be qualified as excellent platoon leaders and instructors in their fields."

During the eight weeks' course, the schedule calls for not only the technical and tactical training in each special field, but also related subjects necessary for a more complete understanding of the course. In each phase of a subject, a certain amount of time is allotted to the study of the best techniques of teaching that phase, preparing the student for the day when he will actually have to conduct classes and prepare his own squads and platoons for combat. All instruction is given with this in mind.

THE basis of all instruction in the Infantry Leaders' School is the famous field method of Colonel Bleasdale, recognized as one of the foremost training officers of the Marine Corps. "In the military services," says Colonel Bleasdale, "a leader is an instructor. Every officer and noncommissioned officer handling troops devotes the major portion of his mental and physical effort to instructing his unit in subjects which they must learn or to correcting them in work done. A military leader's chief job is instructing; to train a unit, be it the sergeant's squad or the colonel's regiment, means to instruct it."

The five stages of instruction, according to the colonel, are:

(1) Preparation.
(2) Presentation, including explanation and demonstration.
(3) Application, by actual practice.
(4) Examination, written, oral, or practical.
(5) Discussion.

Of these, he regards the preparation of the instructor as the most important. "The members of your outfit," he tells

the men he is training, "have all known dopes; there is no need of your setting an example of how to be one."

Here are some of the practical hints Colonel Bleasdale has set forth for the guidance of instructors. In presenting them, he demonstrates in unforgettable pantomine the right and wrong methods.

(a) Speak loudly. (Try to be born with a pleasing voice –if not, cultivate one—do not ask me how!)

(b) Speak to the class! Look into their eyes! Talk toward them! Do not talk to the blackboard or to the machine gun! Do not look off into space and talk through a window or to a distant mountain top.

(c) Do not hide the diagram on the blackboard or the mortar on the ground by standing in front of them; stand to one side, use a pointer, look at the class and speak loudly!

(d) Distracting Mannerisms: In order to keep the students' minds on the subject you are presenting and not on you as an individual, avoid playing with keys, buttons, running your hands through your hair, fooling with a handkerchief, and other peculiarities you have observed in instructors.

(e) Stand still, do not move to and fro! The students begin to watch your movements and lose interest in what you are saying. The ever-moving type reminds them of animals at the zoo.

(f) Be enthusiastic. Do not come out before your squad with the disgusted attitude of one who is not in sympathy with the subject. That type of instructor should be booted out of the picture!

(g) Do not be the "halting" type; avoid a lot of "er's" and "ah's" (by proper preparation).

(h) Do not be condescending; some of your students are at least as bright as you are.

(i) Have a sense of humor, but do not try to be funny.

(j) Never decide the student is stupid. Be patient. One person will eat up map reading but cannot lead a squad through a musketry problem.

(k) Never bluff; admit your ignorance. If a man asks a question which you cannot answer, ask the class if anyone of them knows the answer and, if they don't say you will try to find the answer elsewhere and have it for him at the next session. If a question is too silly to discuss in class tell the student that you do not wish to devote any more time to it in class but will discuss it with him after the class.

(l) Have lettering and diagrams on charts and blackboards large enough to be seen by students in the rear of the room without effort. Avoid too much detail—it will spoil your whole chart or blackboard diagram.

(m) A good instructor makes a difficult subject seem simple; a poor instructor makes a simple subject seem difficult.

(n) Have all equipment and facilities in good shape.

(o) An excellent way to expedite training in Methods of Instruction is to have frequent periods of "coach and pupil" methods of instructing. A few minutes daily of bayonet training or physical exercise with or without arms using the coach and pupil method will give instructors an idea of how their students are developing.

(p) Use manuals and publications issued by the Quartermaster as textbooks for study references and the basis on which to instruct the unit or class.

(q) Reduce to the minimum the number of hours devoted to work in classrooms—get out in the field and do the stuff in a practical way.

(r) Insist on every person paying close attention to the subject you are trying to put across.

(s) Master the text: Even though you wrote the pertinent manual yourself—study it the night before you train in the particular subject. Remember—"Preparation"!

(t) Use notes for talks and outdoor training; they will save you from getting off the track. Line up your ideas—think out your procedure—reduce the ideas and procedure to brief "reminder" notes arranged in the order desired—then follow the notes!

(u) Make progress in the subject! Do not start anew every time a new man joins the platoon.

(v) Avoid profanity. Never use obscene language.

(w) Make clear to the student the practical value of the particular bit of work being done.

(x) Encourage students to ask questions.

(y) Do not digress from the scheduled subject.

(z) Insist that your subordinate leaders master the instructions contained in the official manual on the particular subject.

THE instruction in each class is roughly divided into the basic, technical, and tactical phases of the subject. This covers from the elementary instruction of the individual and the weapons of his unit through the tactical employment of the unit against the enemy and where it will fit into the large picture.

Toward the end of the course, each student is required to prepare original tactical problems to acquaint him with the details involved in the preparation and conduct of problems for his own unit. Some are selected at random and run by the class in the field, followed by a general critique by the other members of the class. The future instructor learns in this way the meticulous care and knowledge of the subject necessary to stage a good problem.

In addition to the vast training facilities which already were available at Camp Lejeune, the Leader-Instructor School has built many more. There is an individual attack course where the student has an opportunity to make use of all the tactics that he has learned. Live ammunition is used, and if the student makes an error, a bullet whizzes close by or a booby trap explodes, reminding him either to learn his lesson or pay up his insurance. Machine guns fire, snipers harass him, and he is expected to take the proper action to fulfill his mission. Various Jap ruses are employed so the student will know what may be expected in actual combat. It is a grueling course, teaching realistically the quick reactions demanded in the field.

In the 81mm. mortar class and the heavy machine gun class, thorough instruction is given in indirect fire, methods of computing data and situations where it may be used to greatest advantage. An area for indirect firing problems has been laid out, complete with fire control and observation towers. Stress is given to what may be accomplished when its value is recognized and the technique is mastered. A study is made of noteworthy examples in the last war.

Other projects include a small unit Jap combat course

against a demonstration squad of Guadalcanal veterans using Jap tactics and situations similar to those met in the Solomons, a small village for instruction in the attack of a village, and a series of fortified positions similar to those encountered by Marines in Buna and other South Pacific strongholds.

COMBAT conditions are stressed in all field work and as much realism is introduced as is consistent with safety. When a student is in bivouac, it is not an improved, cleared area, such as would be found in an established base camp. Instead, he learns what it might be like on a prolonged patrol action, away from camp for days. He finds out what it is like to be cold, and hungry, and tired, and then have raiding parties attack, day and night.

Bivouacs, landing operations, raids, and night tactical problems are opposed by other classes, groups of instructors, Seabees, and various combat organizations under training at Camp Lejeune. As a potential leader and instructor, the student must be familiar with the worst conditions under which his future unit will be trained to operate.

Night operations for each unit is stressed. The student is trained to make the best use of all his senses and to use the weapons of his platoon to best advantage at night and under adverse conditions. Jungle situations and swamps found in the great expanse of Camp Lejeune toughen the future leader and show him what he must prepare his platoon for. Long marches, carrying weapons by hand, show the potential combat leaders the extent of physical conditioning necessary in combat troops. Various expedients for conditioning troops are taught, including judo, the bayonet and physical exercises with equipment. However, no less importance is given to the necessity of long hikes carrying combat equipment.

All students and instructors are imbued with the latest instructional methods of the Marine Corps Schools and the Army Infantry School at Fort Benning. Increasing numbers of training aids are being made available to the school and instruction is given in how best to prepare and use them.

When the students have successfully completed the course of instruction and have become qualified as leaders and instructors, they leave the school with the conviction that their type of platoon is the best in the battalion and they are eager to get one, train it and lead it in battle.

Lost and Found

Marines are moving around fast these days, and every now and then one of them gets separated from his gear. Trying to get a man and his effects paired up again is the task of 1st Lieutenant R. E. Chamberlain, in charge of the Unclaimed and Missing Baggage Section at Camp Elliott, California. In their first three months of duty, Lt. Chamberlain and his staff of five restored about 2,000 seabags, locker boxes, and pieces of luggage to their owners. One Marine back from overseas duty was suprised to find waiting for him a seabag he had lost track of in New Zealand a year and a half earlier.

Lt. Chamberlain's score on returned pieces has been running about ninety-five per cent. The remaining items usually belong to men listed as killed, missing, or prisoners of war. As a rule one or two items a week are taken off the shelves when their owners, reported as missing, are discovered safe.

A number of lost pieces are shipped into the Unclaimed and Missing Baggage Section, but most of them are picked up in daily trips by truck around the railroad stations and bus depots at San Diego. When a lost piece arrives, letters are sent out in search of the owner. A captain back from the Pacific recently received a letter asking what he wanted done with some luggage that had gone astray two years earlier. Sometimes the section has to track officers and men through five or six transfers across the nation, or to the other side of the Pacific.

The section, operating under Base Depot, was organized by Lieutenant Colonel Roy H. Beird, Area Quartermaster, who turned it over to Lt. Chamberlain. Says Lt. Chamberlain, "In this job there are no kickbacks. All of my 'customers' are satisfied."

Finding Their Places

By Major R. R. Hannas, Jr., USMC

EARLY in February this year, twelve District Rehabilitation Officers headed out into the various Marine Reserve Districts to hoe the row of rehabilitation to the best of their ability. True, policy had been established and directives issued, the complexities of their jobs as enumerated on paper gave them only a small inkling of some of the actual problems they were to meet through the operation of their offices.

Initially the Rehabilitation Officers performed all the rehabilitation duties themselves—interviewing dischargees, establishing contact with the coöperating governmental agencies, providing themselves with necessary local publicity, and reporting regularly their recommendations for the improvement of the administration of the program. Later, as was outlined in the April issue of the GAZETTE, a school was established at Parris Island to train enlisted interviewers who could take the burden of the interview off the shoulders of the Officer and free him for his other duties. Forty-four of these occupational technicians have now been trained and the last increment is being detailed to posts and stations about the country. Then, with the addition of clerical help and Women's Reserve officers to administer in the absence of the male officers, the district rehabilitation offices assumed the proportions of a workable unit.

The program has now been in operation long enough for us to observe some of the problems that have arisen in assisting Marines to square away in civilian life after discharge. Some of the problems may be solved with a simple bit of advice; others have required the coöperation of outside agencies, supplemented by head and leg work. In the former category we have the following two instances, both of which occurred in the Sixth District in the early days of rehabilitation.

A TWENTY year old boy was being discharged at Parris Island for physical reasons and in this case had already been interviewed by a well-meaning but not well-qualified woman interviewer, housewife variety. Inquiry revealed that the lad, acting on advice, was intending to go to work in a defense plant about one-hundred miles from his home, where, he had been told, he could start in at twelve hundred dollars per year. Further inquiry brought out that he had been a mechanic at home making thirty-five dollars per week, that the job was available to him upon his return, that his father was an invalid, that an only brother was contributing to the support of the family, that his mother had to do all the work around home, that he liked to garden, and that the family had about an acre of land for gardening which would be neglected if he failed to return home.

After letting the lad build up his own case, it didn't take long for the Rehabilitation Officer, a quick thinking captain, to break it down into figures for him. Thirty-five dollars per week, the mechanic's salary, for fifty-two weeks, would amount to eighteen hundred and twenty dollars. If he went to another town he would have to pay for room and board, and with the support that would be necessary at home there would be little left for himself. On the other hand, if he stayed at home he would be making six-hundred more in actual cash, could pay his parents room and board, have his garden, and furnish vegetables for the home. The boy went home.

Another was an All-American football player who was leaving the service because of partial paralysis of his right hand. A chipped bone received in a football game was pressing on the nerve of the hand, but could be relieved by an operation which, because of the origin, would not be performed by the service authorities. He was approached by a representative of one of the civilian agencies and urged to go to work in the shipyards at Charleston. He was given no advice relative to the correction of his disability.

The advice of the captain was to return for the operation to the university he had attended, and then to apply for work at the university placement bureau, which could easily place him in the vicinity where his popularity was so well-established. The man has undergone the operation and hopes to return to the Marine Corps.

AS mentioned before, not all cases are that simple. We have the following circumstances incidental to the pre- and post-discharge experiences of one J, an ex-gunnery sergeant with about nineteen years' service.

J had been discharged prior to the inception of Marine Corps Rehabilitation, but after floundering about with the SS *Outside* decided that there was someone in the Corps with whom he wanted to sit and talk out the situation man to man. One of our Rehabilitation captains fell heir to the case. J's discharge had been brought about by a service-connected head injury, and shortly after leaving the hospital he filed a claim for pension, which had been acknowledged. Four months later he had heard nothing further on his claim, while others discharged after him were already receiving their pension payments (they had wisely

filed claims before leaving the hospital). To disgruntle him further he had two grievances against the service, one a pay account matter and another a shipping charge on a seabag. He had seen one state senator in an attempt to speed up pension adjudication, and he was on the verge of talking to another with a view toward "splashing" the case in newspapers to show the run-around he thought he was getting after his long years of service.

The rehabilitation officer, through close operating liaison with the regional Veteran's Administration authorities was able to obtain immediate adjudication of the pension claim. J was also furnished with the proper forms for submitting incidental claims to the Marine Corps. The conclusion of this case showed J that he was not getting a run-around, while the Veteran's Administration and the services in general were spared some unpleasant publicity.

The average problem now encountered by the enlisted occupational technicians is illustrated by the story of R, who was discharged in San Diego and returned to an eastern city to live. Learning of the new Marine Corps rehabilitation program, he appeared for an interview at the local rehabilitation office. A preference test showed that clerical work was most in accord with R's interests, and his own statements bore this out. He was then referred to a veteran's representative at the local United States Employment Service Office, who made use of the findings at the rehabilitation office. He was presently placed in the Department of the Interior as a Junior Clerk, after first passing a Civil Service examination.

While the job in this case does not pay a very substantial salary, it is probably as well suited to R's preferences and requirements as any other. He has filariasis and some nervous disorder, and should not take on work involving much standing or walking or nervous strain. Moreover, he wishes to have as much time as possible for studying, since he plans to take work in an evening high school soon. He has two years of high school to complete. When he has finished school and made progress toward recovering his health, he should be able to obtain an even better job.

Many other problems arise—pension claims, funds for further education and vocational training, release from essential work by the War Manpower Commission, and employment problems. Elimination of a great many of these questions is being accomplished by the use of the various tools at the disposal of the occupational technicians—preference and ability tests, qualification cards, area labor statements, and knowledge of local conditions as reported by Rehabilitation Officers and Marine Corps Procurement facilities.

Judging by the progress made in solving the problems of today's dischargees, it is anticipated that workable procedures will be developed by the time war ends and large numbers of men are discharged.

Rejected as Impractical

Forty-one years ago the first formal report of the quartermaster-general of the United States Army said of the gasoline buggy:

"As a primary means of carrying troops and baggage I do not consider the automobile at all suitable, nor do I believe it can ever be perfected so as to make a reliable means of efficient transportation of troops operating in the field, and their baggage."—*Milwaukee Journal.*

Learn and Live

By Lieutenant Colonel L. M. Mason, USMC

The author passes on a few hints about minor problems that come up in the field. Though minor, they are important. They may save lives.

Muffle the Canteens

TROOPS in tropical front lines find that the bottoms of their canteens are built amazingly close to the top. Water is seldom found at the location, and it is highly impractical to bring up a water trailer. You can't allow everybody to go to the rear for water, so you fall back on the standard carrying party. A few men collect many canteens and return them filled to their owners. The easiest way for two men to carry several canteens is to run a stick through the loop of chain attached to the canteen cap. But here a problem comes up. The carrying party, with ten or twelve empty canteens banging together, sounds like a fish cart or a Good Humor man. The noise is muffled if canteen covers are left on, but when the canteens are filled the added weight of cover and cup puts too heavy a strain on the chains, especially when the party is jogging across jungle terrain. You can meet the problem by having each man insert his canteen in a wool sock, cutting off the excess length. This silences the carrying party, and also allows a man to take a drink in the front line without giving away his position by the sound of the canteen scraping in and out of the canteen cup. Dampening the sock keeps the water temperature a little lower.

Water for Patrols

Patrols need to travel light, and usually depend on the land for their water supply. The leader of a small patrol does not want to halt for the night by a source of water if enough daylight remains to push on. Yet he doesn't know whether or not there will be a water source ahead. To carry filled expeditionary cans is a useless expenditure of energy if there turns out to be water when the patrol finally halts. One workable solution is for the patrol to carry one or two empty expeditionary cans. If there is no water at the halting place, a small detail can return and fill the empty cans at the last source of water—stream, shell hole, or native well. In this way, water is carried the shortest possible distance, and the patrol has containers in which to purify its drinking and cooking water.

Two In One

So you think you have too much gear to carry? But still you don't want to leave anything behind that you may need. Try sharpening the edge of your intrenching tool, and you can leave your machete behind or give it to someone carrying an intrenching pick.

Keeping Contact

Have you ever tried to keep contact with the man ahead of you while moving noiselessly through the jungle at night, without lights and without a rope? You actually can't see your hand before your face. But it is usually not difficult to find a bit of luminous grass or wood on the jungle floor. (If the weather has been dry, you may have to kick the top surface off the ground to find the luminous material, for it glows only when damp.) Attach a small piece of this material to your helmet cover or attach it somewhere about your body. This provides a silent, positive, short range connecting link between individuals.

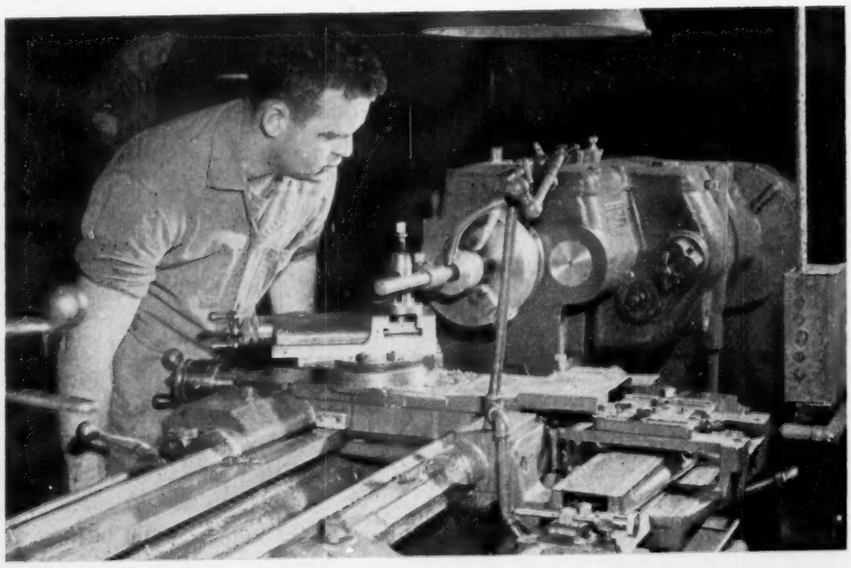
Stay Warm and Dry

If you are going on patrol, you will want to travel light and yet have all the clothing you need. You are wondering what you will do if it rains or if your clothes get wet crossing a stream. This is how to keep warm and sleep warm in the jungle, rain or shine. All you need, besides the clothing you wear, is one extra pair of socks, a headnet, a poncho, and either a light-weight wool sweater or a flannel shirt. On bright days the sun and temperature will keep you warm, and if your clothes get wet they will dry quickly even while you wear them. On rainy days your normal activity will keep you warm, and if you are inactive you can keep warm and dry under your poncho. After the sun goes down, it gets considerably cooler, and if your clothes are wet you are apt to be uncomfortably cold. When you are ready to lie down for the night, take off all your clothes, put on the dry sweater or flannel shirt, and turn in using the poncho for ground mat and cover. Your clothes will not dry overnight, but they will soon dry on your body when you get moving in the morning and the sun comes out. If it rains during the night, here is a way to keep dry, and even to get some sleep if you're tired enough. Put on your poncho, keeping your sweater or shirt dry. Now sit down on your pack, lean back against a tree, spread your poncho out around your position so it drains away from you, and try to sleep. Your body heat inside the snapped-up poncho will keep you warm and dry.—As for socks, wash one pair every day and dry them on your pack as you march.

Deaden the Ping

Much has been said for and against camouflaging helmets. Not to uncover that argument, but just to repeat: unless some cloth covers the outside of the steel helmet there will be a distinct "ping" whenever a twig brushes the metal. When the enemy's ears become his eyes, the "ping" becomes a good aiming point. The issue camouflaged cloth helmet cover will deaden this sound. But if you dislike this cover for any of the reasons voiced against it, don't neglect the problem. A sand bag will furnish burlap which can be placed over the steel and held in place by wedging the edges between the helmet and the liner. In the jungle you are at such close quarters with the enemy that all noises must be eliminated.

Ordnance School Headquarters

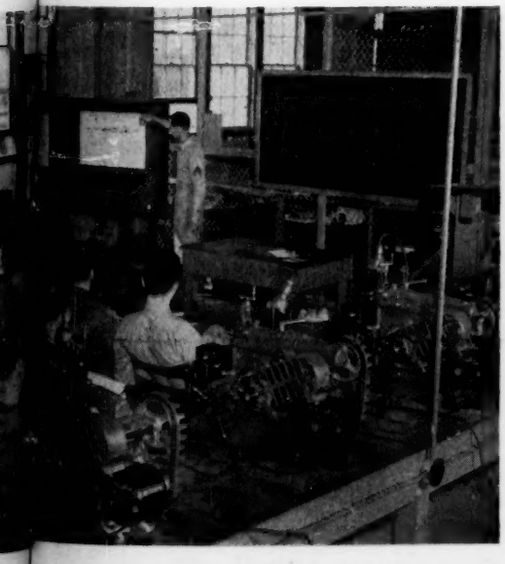


The machine shop

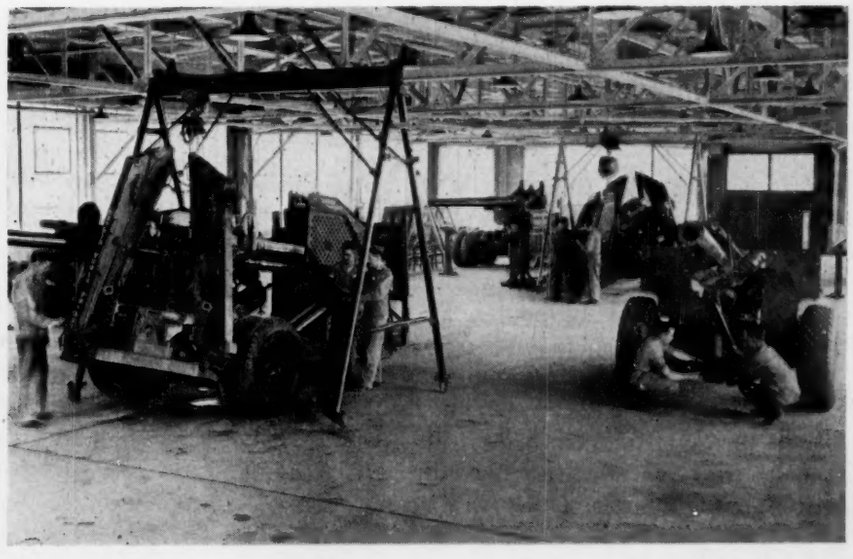
The Ordnance School, one of the most active of the Marine Corps Schools at Quantico, Virginia, was organized early in 1942 by Lieutenant Colonel Norman Hussa. The present officer in charge is Lieutenant Colonel Herman Nickerson. Instruction is given to artillery mechanics, munitions technicians, fire control repairmen, and machinists. "Our mission," says the school, "is to produce ordnancemen qualified to the fourth and, in some instances, fifth echelon of maintenance. To complete that mission successfully, we are dependent upon a steady flow of practical suggestions and constructive criticisms from combat-tested units."

The repair depot

An officers' class



The machinists' course



The gun bay

Even in a Foxhole . . .

By Staff Sergeant Gerald Langford, USMCR

THE armed forces are now offering many educational opportunities to the men and women in uniform. Appropriately enough, however, the oldest military educational institution of its kind in existence was established by the oldest branch of the services, the U. S. Marine Corps.

The Marine Corps Institute (MCI) was first established in 1920 as a residence school at Quantico, Virginia as a means of raising the educational level of the Corps and of attracting the type of men desired. It was Lieutenant Colonel William C. Harlee who conceived the idea of MCI as it operates today, a correspondence school offering its facilities, free of charge, to all Marines everywhere. By 1922 the school had been moved to the historic Marine Barracks at Eighth and Eye Streets SE in Washington, and was well under way.

In twenty-four years of operation more than 106,450 officers and enlisted men have enrolled for MCI courses. At present there are nearly 26,000 active students, and applications from new students are coming in at the rate of over 2,000 a month. The MCI letterhead motto reads: "Motive: The Best Educated Military Service in the World," and the rapid expansion of the school in World War II augurs well for the future of democratic citizenship.

Under the efficient administration of Colonel John Potts, assisted by 2nd Lt. D. M. Hyde, Registrar, and Warrant Officer A. C. Anderson, Supervisor of Instruction, together with a staff of nearly a hundred skilled Marine instructors, MCI offers courses grouped into two separate schools, preparatory and industrial. The preparatory school includes all standard high school subjects, while the industrial school gives training in technical, industrial, and commercial fields.

For the duration of the national emergency the greatest proportion of students will be those who interrupted their high school studies to enter the Corps and who are eager to take advantage of this opportunity to finish up their work and obtain their diplomas before returning to civilian life.

IN the present setup of the preparatory school there is, first of all, a guidance program. Educational advisers are stationed at several of the larger training camps through which most Marines pass. Skilled in educational guidance, these advisers are available for conference with prospective students to work out programs of study in line with students' previous training and future ambitions.

Through conference between the adviser and MCI officers and, in turn, between MCI and the student's former high school, a Marine who wishes to continue his education is guided into the courses which will benefit him most. And after he is enrolled, this individual guidance is not dropped but is broadened to include the instructor in each successive course taken.

Good instruction by the correspondence method is not simply a matter of arranging a series of questionnaires to be filled out. And a good faculty for a correspondence school is not one transferred straight from the classroom. Practically all members of the MCI high school staff are college trained, and most of them have had previous teaching experience. But much has been added to that basic qualification.

First, they are all enlisted personnel and have been through the well-known Marine "boot camp." There they learned the hard way what Leathernecks think. These instructors know from firsthand experience the living conditions in camp and in the field.

When they took up their duties at MCI, moreover, they did not simply start grading papers. Having lived with the men they were to teach, they now studied with their students. Before grading a paper, they themselves took the courses they were to teach, and were graded like any student. Thus they learned the specific requirements of the courses, and afterwards they went through a carefully supervised apprenticeship in the art of teaching on paper, an art developed over a period of twenty-four years of day-to-day experience at MCI.

FULL-FLEDGED instructors at last, they still remain as much Marines as teachers. They live in barracks like other Marines. They have daily inspections, they drill for bi-weekly parades, and they maintain the cunning of their trigger fingers through daily familiarity with the rifle. No ivory-towered paper workers, these Marines live in the same world with their students.

This does not mean that strict academic standards are not maintained. Papers are graded with the same meticulous care that characterizes every phase of Marine discipline. An "A" on a paper is a real mark of distinction. On all unsatisfactory lessons the student is required to do additional work until his knowledge of the subject and his ability to express his knowledge are both acceptable.

When an instructor has marked a paper, he passes it on to an inspector who checks the instructor's work. "Right" or "Wrong" corrections are not sufficient. The student must be made to understand his errors, to see not only what is wrong but why, and he must be referred to the proper sources upon which to base his corrections. Comments and discussions, rather than check marks, are the instructors' tools.

Through this preparatory school program a Marine may usually earn the diploma which would have been awarded him had he stayed in school. The public school systems of the country have been consistently coöperative in accepting MCI courses for credit, though such arrangements are always worked out with the school concerned.

Do Marines, those who are actively engaged in the battles of war, really take advantage of the opportunity that

is being offered them? One might be inclined to skepticism, even though all textbooks and instructional facilities are furnished without charge. How could these men find time for books and papers in the midst of killing and dying?

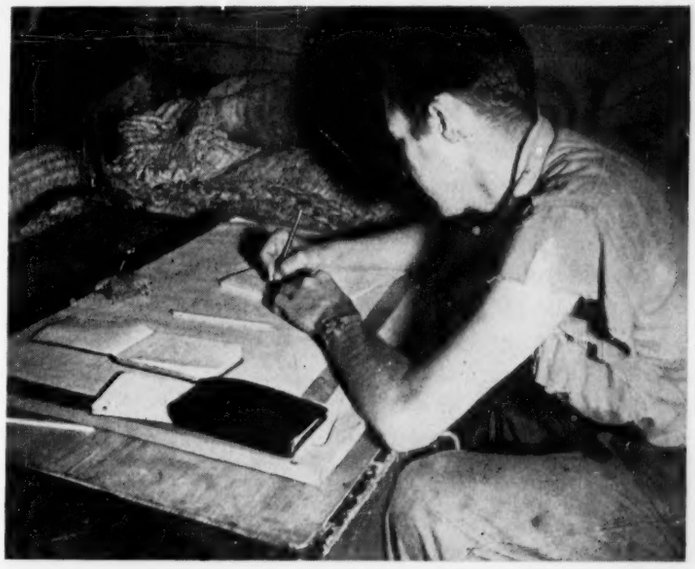
HOW indeed? The number of lessons that come in daily is evidence that they do find time. So are the letters they write in. A man who has been much on the move lately writes to say:

"I am writing to you from a Pacific island. You are by now wondering what happened to my lessons. Well, here it is in a few words. I was unfortunate enough to come down with malaria on Guadalcanal and was evacuated, leaving all my gear behind. When it finally caught up with me, half of it was missing. My book and lessons were among the missing items. I intend to keep up the course, even if I have to do it in a foxhole, on a ship, or in a plane. Please send me a book and more lessons, and they'll be coming in again."

A Marine preparing to go into battle writes:

"I expect to leave for my new station sometime soon. While on the transport I will have plenty of time for my studies, and the voyage will probably be a long one, what with stopovers, etc. . . . "

As in matriculation, the mechanics of accreditation are handled for the student without charge. A transcript is furnished the principal of the student's former high school stating how many Carnegie units the courses are worth, how many hours of preparation are required on the average, and what grades the student made. When a Marine is certified by MCI as having completed the courses required for his graduation, the high schools of the country have learned that they can grant official credits and award their diplomas without any uncertainty about the quality and thoroughness of the work in question.



On his locker box, amid stores, a Marine does his MCI lessons.

MCI training is a valuable contribution to the war effort. Being an effective soldier in the armed service of a democracy requires more than aptness with a rifle or dexterity with a bayonet. It requires intelligent citizenship. If this is lost sight of, the very thing we are fighting for is lost sight of. The men of the Marine Corps have not lost sight of it. They know, moreover, that after the war a man without a high school diploma is going to be handicapped more drastically than has ever been true before. They want to be prepared for both the opportunities and the responsibilities that will await them. The work that is being done at MCI holds far-reaching possibilities for the building of both military morale in the present and intelligent citizenship in the future.

New Command of Second Marine Division

MAJOR GENERAL THOMAS EUGENE WATSON, who led the Twenty-second Marine Regiment in its invasion and quick conquest of Eniwetok atoll, has been named Commanding General of the Second Marine Division, which earned a Presidential Unit Citation for its historic victory at Tarawa.

Major General Watson succeeded Major General Julian C. Smith, transferred to another assignment.

Four years after enlisting in the Marine Corps as a private, Major General Watson was commissioned a Second Lieutenant in 1916. He saw service in Haiti, the Dominican Republic, Mexico, Nicaragua, China, and at various United States posts.

He was promoted to his present rank April 21, 1944.

Combat Chaplain

By Lieutenant Glyn Jones (CHC), USNR

AFTER some twenty-one months of duty with the Marines I am convinced that the "Marine mentality" is quite different from that of any other armed force. Certainly the Marines have a unique *esprit de corps* and a consistently aggressive attitude toward life and the specific duties before them. When the Premier of Japan boasted during a radio broadcast that Japan was willing to spend ten million men in order to win the war an enlisted Marine in our regiment at Guadalcanal drawled, "Well, if they're willing to spend 'em, we're willing to kill 'em." A parish of which this reaction can be regarded as typical is a challenge to the sturdiest man of the cloth.

For his heroism at Cape Torokina, while serving with a Marine division on November 1, 1943, Lieutenant Glyn Jones of the Chaplain Corps, USNR, is awarded the Silver Star Medal by Acting Secretary of the Navy Ralph A. Bard.

As we boarded the transports which were to carry us into combat at Guadalcanal we could sense that the men were girding themselves for the fight. During the languid days at sea they came often to the chaplain with their deepest thoughts, and on the day before landing they thronged to church and received Holy Communion with the meditative quiet of men who have reached an insight into the profound mysteries of life and death.

The bloody Cape which they wrested the next morning from the enemy is now another page in the shining history of the Marine Corps. Men died in ugly and painful ways. The wounded suffered quietly, and already bore in their eyes a deep sense of isolation from the battle which raged only a few yards away. The doctors and corpsmen, often unheralded heroes, calmly worked on the torn bodies. The two doctors with our battalion, Dr. Sam Elmore and Dr. Art Willetts, utterly thoughtless of their own safety, worked under heavy fire in two dressing stations and performed medical miracles.

The fight subsided in the afternoon, and toward evening we dug foxholes and prepared for the night. As the sun was going down I took out my Testament and sat on the edge of the hole I shared with a Marine. Turning to the beautiful lines of St. John 14, I read aloud, "Let not your heart be troubled. . . ." A Marine with a Testament in his hand interrupted me to ask which passage I was reading. As I answered him I looked about at the other men. Grimy, sweating, unshaven, they were relaxing on the edges of their foxholes and in the hands of many of them were Testaments, rosaries, and prayer books. No one was self-conscious; it simply seemed at that moment to be the most natural thing to do.

DURING the next day we buried the dead in a little cemetery on the Cape so recently won. Throughout the morning the Marines reverently carried the remains of their buddies to this last resting place, then knelt with devotion during services.

It is almost unnecessary to say that many men turned to God for help during those days. Certainly there was driven home to us a new sense of our great responsibility as chaplains. Whether the religious experience which came to men in the crises of combat will remain with them is a question few of us would dare to answer. Associated as it is with an experience of combat which most men prefer to forget, the newly found relationship between many men and their God did not commence under the most favorable auspices. But we can attest that it was an intensely real experience.

My men did little thinking about the world after the war. Sometimes they did say, "We were looking for it," or "Why didn't we let the Japs alone and then they would have let us alone?" This attitude among the men doing the fighting indicates that they do not grasp the larger significance and meaning of the war. But they often grappled with the profound concepts of religion, asking such questions as, "Why does God allow war?" and "What happens when you die?"

The chaplain's rôle in combat has been glamorized, but most of his work is done in the precombat period. Once his men are in battle, the chaplain can give them little that

they do not already possess. They are upheld by religion who have learned and practiced the "Presence of God," just as those fight best who have thorough training in proper tactics. Nevertheless, it is a thrilling experience to guide men in their extremity as they seek the help of God.

The civilian clergyman who enters the service makes many adjustments to his new life. Those of us serving with Marines become accustomed to holding Divine Services under all conditions. At Guadalcanal, since our congregations could not often come to the Church, it was necessary for us to bring the Church to the congregation. Thus a Marine Chaplain becomes master of the jeep, habitué of rubber boats and Higgins boats, and practiced hiker. It is not unusual to be met by a mixed congregation of Marines and South Sea Island natives. Occasionally the natives add striking and appealing harmonies of the Islands to the singing of familiar hymns.

COUNSELLING occupies a major part of the chaplain's time. Marines come to him with every conceivable kind of personal problem. After our first six months of overseas duty much of my work centered about the domestic difficulties of the men. Many of them came with stories about the infidelity of their wives. Often the wife brazenly boasted of her affairs in letters to her husband, and there were numerous instances in which the wife asked the Marine to sign a waiver so that she might obtain a divorce. My reactions were violent, but there was little or nothing that could be done about it. It seemed as though I was watching the moral disintegration of part of our society.

Occasionally we chaplains discovered mental problems requiring the specialized skill of a psychiatrist. These were indeed pitiful, though at times we had to seek in them some element of humor in order to maintain our own stability. There was one Marine whom everybody knew as Eight Ball. This poor boy, who made the first landing at Guadalcanal, was followed by a "Voice" which called him Eight Ball and conversed with him and guided him. He told us of one occasion when the "Voice" had interfered with his work on patrol. The patrol had received instructions to proceed on a certain azimuth. Once they had entered the jungle, however, the "Voice" came upon the scene, and said to the boy, "Eight Ball, go north!" Eight Ball objected, but finally was persuaded to obey and parted company with the patrol. He had walked only a short distance when he stumbled into a Jap ambush. Throwing himself on the ground, he consulted the "Voice" as to what should be done. But his appeal was in vain, for the "Voice" replied callously, "You've got the rifle, I'm getting the hell out of here." Thereupon Eight Ball settled down to business and killed eight Japs. He was decorated for this accomplishment before his maladjustment was discovered.

As a Baptist chaplain, I immersed many men in the blue waters of the Pacific and some in drowsy tropical streams which not long before had run bloodily to the sea. I am perhaps the only Baptist chaplain who ever lost a man in the act of immersing him. On a beach in Samoa I had discovered a fine natural baptistry in a sink hole which at high tide was a placid pool, and from which the water drained at low tide. The candidate and I entered the pool just as the tide started to go out, and stood in water up to the waist. I read the short baptismal service and handed my book to one of the several Marines who were observing the ceremony from the bank. When I turned about the candidate had disappeared. For several seconds all of us were bewildered. Then we heard a loud hail coming from the sea. The candidate had lifted his foot to scratch it, and had been sucked by an undertow out to sea. He came to the surface a few yards off shore and swam lustily to the beach. When I invited him to return to the pool to complete the baptism he stated in no uncertain terms that he had been baptized enough for one day. I replied heatedly that he was not to regard this accidental ducking as a baptism and that it "wouldn't count" unless I performed the ordinance. Thereupon he reluctantly consented and was baptized. It was not until we had gone several miles on our return journey that the humor of the situation dawned upon us, and we broke into laughter.

DAY after day we chaplains found fruitful work among the men who were on intimate terms with death. We made daily visits to various units, said many a prayer with lads in foxholes, and guided some to Christian commitment. The men were always glad to see the chaplain, particularly if he was able to laugh and joke with them. Our humor was broad, simple and masculine. I shall always remember the Marine who was opening his can of C ration as I walked past. It was his first food in two days. He immediately offered me some. "Thanks," I said, "but why should I eat that stuff after the big steak C Company gave me?" This sally immediately drew fire—"Never yet saw a preacher who could tell the truth" and "What about rationing? Don't you know there's a war on?" All of us knew that we were experiencing a comradeship stronger than words or death. So we laughed with each other and sought together for God.

Duck These Joes

COMMANDERS in the Pacific theaters are handing out stern advice about taking evasive action the moment any enemy planes are seen flying alongside our formations. The Japanese are using air-to-air bombing, and an observation plane is likely to be communicating altitude and airspeed to a bomber above our aircraft. In such instances, changes of altitude and airspeed as well as the usual weaving are in order.—*Air Force,* May, 1944.

Three Marines Awarded Medals of Honor

THE highest award of the United States Government, the Congressional Medal of Honor, has been awarded posthumously to three Marines by President Roosevelt. Honored for bravery at Tarawa were Staff Sergeant William J. Bordelon, USMC, and First Lieutenant William D. Hawkins, USMCR. The third man honored was Private First Class Henry Gurke, USMC, for bravery in the Solomon Islands Area.

The citations tell their stories:

To First Lieutenant Hawkins:

FOR valorous and gallant conduct above and beyond the call of duty as Commanding Officer of a Scout Sniper Platoon attached to the Second Marines, Second Marine Division, in action against Japanese-held Tarawa in the Gilbert Islands, November 20 and 21, 1943. The first to disembark from the jeep lighter, First Lieutenant Hawkins unhesitatingly moved forward under heavy enemy fire at the end of the Betio pier, neutralizing emplacements in coverage of troops assaulting the main beach positions. Fearlessly leading his men on to join the forces fighting desperately to gain a beachhead, he repeatedly risked his life throughout the day and night to direct and lead attacks on pillboxes and installations with grenades and demolitions. At dawn on the following day, First Lieutenant Hawkins returned to the dangerous mission of clearing the limited beachhead of Japanese resistance, personally initiating an assault on a hostile position fortified by five enemy machine guns and, crawling forward in the face of withering fire, boldly fired point-blank into the loopholes and completed the destruction with grenades. Refusing to withdraw after being seriously wounded in the chest during the skirmish, First Lieutenant Hawkins steadfastly carried the fight to the enemy, destroying three more pillboxes before he was caught in a burst of Japanese shellfire and mortally wounded. His relentless fighting spirit in the face of formidable opposition and his exceptionally daring tactics were an inspiration to his comrades during the most crucial phase of the battle and reflect the highest credit upon the United States Naval Service. He gallantly gave his life for his country."

To Staff Sergeant Bordelon:

FOR valorous and gallant conduct above and beyond the call of duty as a member of an Assault Engineer Platoon of the First Battalion, Eighteenth Marines, tactically attached to the Second Marines, Second Marine Division, in action against the Japanese-held Atoll of Tarawa in the Gilbert Islands on November 20, 1943. Landing in the assault waves under withering enemy fire which killed all but four of the men in his tractor, Staff Sergeant Bordelon hurriedly made demolition charges and personally put two pillboxes out of action. Hit by enemy machine-gun fire just as a charge exploded in his hand while assaulting a third position, he courageously remained in action and, although out of demolition, provided himself with a rifle and furnished fire coverage for a group of men scaling the seawall. Disregarding his own serious condition, he unhesitatingly went to the aid of one of his demolition men, wounded and calling for help in the water, rescuing this man and another who had been hit by enemy fire while attempting to make the rescue. Still refusing first aid for himself, he again made up demolition charges and single-handedly assaulted a fourth Japanese machine-gun position but was instantly killed when caught in a final burst of fire from the enemy. Staff Sergeant Bordelon's great personal valor during a critical phase of securing the limited beachhead was a contributing factor in the ultimate occupation of the island and his heroic determination reflects the highest credit upon the United States Naval Service. He gallantly gave his life for his country."

To Private First Class Henry Gurke:

FOR extraordinary heroism and courage above and beyond the call of duty while serving with the Third Marine Raider Battalion during action against enemy Japanese forces in the Solomon Islands Area on November 9, 1943. While his platoon was engaged in the defense of a vital road block near Empress Augusta Bay on Bougainville Island, Private First Class Gurke, in company with another marine, was delivering a fierce stream of fire against the main vanguard of the Japanese. Concluding from the increasing ferocity of grenade barrages that the enemy was determined to annihilate their shallow, two-man foxhole, he resorted to a bold and desperate measure for holding out despite the torrential hail of shells. When a Japanese grenade dropped squarely into the foxhole, Private First Class Gurke, mindful that his companion manned an automatic weapon of superior fire power and therefore could provide more effective resistance, thrust him roughly aside and flung his own body over the missile to smother the explosion. With unswerving devotion to duty and superb valor, Private First Class Gurke sacrificed himself in order that his comrade might live to carry on the fight. He gallantly gave his life in the service of his country."

Weapon of Last Resort

By Captain Stephen Stavers, USMC

AGAINST a rifle, submachine gun, hand grenade, or pistol, a knife is of little avail. Yet in this war a knife is carried by almost every fighting man who can get hold of one. Why? To open "C" rations? Yes. To clear undergrowth? Yes. But the knife is also carried as a stop-gap weapon, something to call on in a predicament where a sliver of steel at a man's side may be the margin between life and death. When magazines have been emptied in an assault at close quarters, few men have the opportunity or presence of mind to load fresh clips. Instead, they carry on with whatever weapon is immediately at hand.

In such situations as these, when something more reliable than bare hands or a gun butt is needed, lies the principal tactical value of the fighting knife. But the knife is at least equally valuable as a booster of confidence and morale. At night when it is too dark to see a target and one is subject to close-in attack, a knife is a considerable comfort.

This is not to suggest, however, that knife fighting technique is superfluous. To possess a knife but not an effective method for using it in combat is to forfeit the confidence inspired by the knife as well as its tactical value.

The lack of a standard knife fighting technique has become conspicuous in this war following pleas by our troops for more knives, especially those troops operating in jungle theaters. Until recently the Marine Corps was the only branch of the American armed forces that had anything approaching a well organized, standardized course in scientific knife fighting.* It is a course of about four hours, and is presented following instruction in the advanced, flat blade, bayonet slashing system, which it resembles. Simplicity and effectiveness are its basic ingredients.

The Marine Corps course in knife fighting is based on the privately printed, restricted manual *Do or Die,* by Colonel Anthony J. Drexel Biddle, USMC. Most other studies worked out in this country are superficial. At best they show a variety of knife holding positions, generally inferior grips, and an anatomical guide of places to try to stab. Most of them are negative; they concentrate on knife disarming. The fact is that no bare-handed disarming technique is dependable against even a fair knife fighter. Trying to disarm a truly scientific knife fighter would be like trying to stop a propeller with the bare hands.

*During the past two years the course has been given to some Amphibious Divisions of the U. S. Army.

Rebounding off enemy's bayonet, knife fighter slashes leading arm of enemy, then slashes his face.

As attacker makes a long thrust, knife fighter parries to the left and sidesteps to the right.

Indeed, the appearance of the scientific knife fighter in action suggests a flashing propeller on the head of a cobra, to use an extravagant metaphor. He uses a slashing attack (rather than thrusting or stabbing), with the knife pointing forward in a loose, flexible manner, the blade flat, and the cutting edge outward. The blade is in constant, controlled, lateral motion, at the same time moving in and out, high and low. Colonel Biddle, student of the greatest European sword masters, strangely enough found this simple, effective technique in the western U. S. It appears to have been known to the American Indians, and to have been refined in the early 1800's by Colonel James Bowie, an American Army officer who died in 1836. To suit his style of fighting, Colonel Bowie designed the knife since known by his name. Colonel Biddle has adopted Bowie's method, added some ancient principles of broad sword and saber fighting, and made other adaptations to suit the altered position of the knife in the scheme of weapons, the limited time available for training, and the function of the knife today.

A smart knife fighter, appropriately trained, can be more than a match for an opponent armed with a fixed bayonet if the bayonet fighter is unschooled beyond the simple thrust and butt stroke attack. (Naturally, the bayonet is superior to the knife when used in the scientific slashing manner of the trained knife fighter.) Mixed weapon techniques, as shown in the accompanying pictures, are part of the knife fighting course taught in the Marine Corps. The trainee learns not only how to fight with knife against knife, but also with knife against club, knife against an unarmed opponent, and knife against fixed bayonet.

MILITARY DIGEST

Survival by the Book*

HUNDREDS of airmen who have been forced to bail out over strange, wild territory owe their lives to what-to-do manuals. Survival books are fine things and for the most part the information in them is solid. However, many of these publications were prepared in haste to meet a desperate need, and certain inaccuracies crept in.

There is a widespread belief, for example, that the problem of thirst on a life raft is solved: one squeezes a fish and water comes out. The fact is that much greater pressure is required to squeeze liquid out of fish than a castaway on a life raft can bring to bear. And then, the product is not worth the effort. Prolonged mechanical squeezing of seventeen pounds of fish *per man per day* would be necessary to provide about a pint of fluid. Besides failing as a source of water, fish is primarily a protein food. Therefore, it requires the use of large amounts of water for elimination of wastes in urine. The same with birds. Sea birds are usually rather stringy, with little fat. So, if a bird happens to light on your raft, he is likely to do so because he is more hungry than you. And don't eat him unless you have plenty of water, or it looks like rain. Obviously, the preservation of water is the biggest raft problem.

To avoid sweating by rigging a shade or keeping the body clothed is one way of prolonging life. There is another which makes sense, but may be dangerous. Immersion in the sea helps the body to save water. But after a few days of exposure on short rations, the body may be so weakened that getting back on the raft after dunking may be impossible. The same purpose—keeping the body cool by wetting—can be accomplished by taking off the clothing, dipping it in the ocean, wringing it out, then putting it on. Clothing should be completely dry by nightfall to avoid chill.

Salt in relation to health and thirst must be considered. Some salt is necessary to preserve health, even with limited water available. Thus, mixing sea water with fresh water, about one part salt to six fresh, is permissible.

The problem of food rations is tied up with water supply. Crackers and mealy foods cannot be swallowed when the throat is dry, but when a little water is available they are preferable to meat. Dried fruit, which stimulates salivation, is a good ration. There has been experimentation with candy products like butterscotch or Charms as ocean and desert emergency foods. These are the best. When assimilated they decompose into water, rather than withdraw it from the tissues, and still supply energy.

The food problem, apart from its relations to water, is twofold: finding it and recognizing poisonous foods. Bearing in mind that the best way to find food is to find a native inhabitant first, we must still face the possibility of a bail-out in deep jungle. The common advice is: eat anything you see a monkey eat. Yet, monkeys eat strychnose fruit, but spit out the deadly poisonous seed, and they can swallow other fruits that would pucker a man's throat badly. Another caution is to beware of plants with a milky sap. This is good advice, but several edible tropical fruit plants *have* a milky sap.

A more inclusive formula would run like this: Eat nothing which has a bitter, soapy or burning taste. Some foods burn the mouth when raw but are safe after cooking. Most pulpy or juicy fruits are safe if they taste all right; but spit out the seeds. The larger fruits are more likely to be safe than the small ones. Nuts, dry seeds and roots are dangerous unless you know them. If a fruit is bitter, and from a plant with milky sap, steer clear. All grasses and bamboos, identifiable by the hollow jointed stem, are safe. Beware of wild tomatoes, parsnips, cucumbers, melons, onions and beans; but wild *fruits* (as the term is commonly used), resembling cultivated fruits like strawberries and raspberries, are likely to be safe. A single rule is this: if the food looks edible, try a spoonful; save a sample for identification; if it does not make you sick or have a purging effect in eight hours, eat more. It is well to be prepared in an emergency to discard many civilized prejudices, such as those against eating grubs and beetles, and raw meat. But remember that non-poisonous varieties of salt-water seafood are just about the only kind of flesh that can be eaten raw with no danger. Almost any other kind of fish and some other animals are likely to carry some kind of parasite that might take up lodging in your body. Eat it raw, if you have to, but cook it if possible.

Proper preparation before a mission will insure that plenty of matches are on hand in a waterproof container. There is danger that descriptions of primitive fire-making methods, based on friction, will lull us into being careless about wasting matches. It is possible to make fire by these methods, but only after much practice and perserverence.

An important phase of the survival problem is determining direction. The use of the Southern Cross as a guide in the southern hemisphere is fairly dependable. By projecting the long axis of the Cross to a point where is intersects a line bisecting the line between Alpha and Beta of Centaurus, one can approximate due South. Find a good star chart and check these points.

But the sum total of advice on direction-finding is that nothing takes the place of a compass. Keep it with you. Keep it dry. And trust it!

*Condensed from *Air Force*, May, 1944.

Jungle Warfare

(Continued from page 39)

hundred yards over the type of ground and through the type of vegetation that we have in this country, or that is generally found in Europe, North Africa, or China. It might easily take the runner a quarter of an hour to cover this distance over a slippery, narrow trail in the jungle.

Squad and platoon leaders are faced with problems of communication and control on a smaller scale. When a squad on a jungle trail covers thirty to fifty yards and a platoon from one hundred and fifty to two hundred loss of control is unavoidable. The only way this can be rectified is to make formations more compact, to decrease distances and to have platoons and companies move as units. When any part of a unit moves off the trail and the leader loses sight contact, he has lost a great measure of control.

Map reconnaissance should precede a movement in a jungle area—if maps are available. In the Solomons no accurate detailed maps were available. We may hope for fairly accurate maps in the future when we operate in other areas. To state that a map reconnaissance precedes a jungle operation is misleading when no accurate maps are to be had.

Reconnaissance by air photos including mosaics and strips is valuable in that such natural features as rivers, lagoons, inlets, off-shore coral formations, and such works of man as coconut plantations, native gardens and villages are clearly delineated on them. Vertical photos, however, will not reveal terrain details hidden by a solid jungle canopy. Obliques will reveal the contours of the ground though not to scale and with considerable distortion. The most indispensable types of air photos are stereo-pairs and vectographs and valuable information of the terrain and ground forms can be gained from a study of them. Engineers are now equipped to make vectographs.

Ground reconnaissance should, when possible, precede an attack in the jungle. If scouts are properly trained this is feasible. The extent of the enemy position must be determined before an attack can be launched against it.

It will not always (in fact, it will rarely) be possible to determine the nature of his defenses, that is, the state of their development, but the extent of his defensive area can usually be determined. This requires constant, alert, intelligent, and aggressive patrolling. Patrolling must be continuous, for the enemy is quite as capable of making daily changes in his dispositions as we are. In most cases, his day and night positions are not identical, except where defenses are highly developed as at Buna or Munda.

The jungle affords concealment for offensive movements and for defensive positions. It affords the same degree of concealment to the enemy as to us. For this reason surprise is always possible in the jungle.

The undergrowth and the dim light of the jungle favor stealthy movement of attacking forces without detection to assault positions.

The exact "fixing" of enemy defensive installations is a most difficult task.

Because of the undergrowth and the rugged terrain, it will never be possible to realize maximum potential fields of fire for weapons and it will be a waste of time to try to find ideal positions, for none such exist. Practically, a field of fire about 100 yards in length will be the maximum that can be expected for machine guns and automatic rifles; a field of fire of fifty yards will be average. Fields of fire for individual riflemen are strictly limited.

The Nature of Jungle Warfare

THERE are no "Blitz" campaigns in the jungle. The conditions that limit the operation of self-propelled artillery, tank destroyers, weapons and troop carriers, and the tracked and wheeled vehicles that have played such an important part in other theaters of war are apparent.

The pattern of jungle fighting is one of many small combats in which groups, squads, parts of squads, automatic weapons, teams, and platoons strive to eject the enemy from his positions. The small units are armed with rifles, bayonets, carbines, hand grenades, flame throwers, automatic rifles, light machine guns, light mortars, antitank grenades, "bazookas," pistols, knives, sub-machine guns, and demolitions. These are all weapons carried on the backs of the men who fight with them.

Battalion, regimental, and division commanders, because of lack of observation, difficulty of movement and far from perfect communications, cannot retain close control of an action. Jungle warfare demands the highest qualities of leadership of all officers and noncommissioned officers. Leaders must be aggressive and resourceful. The quality of initiative is at its highest premium in the jungle. This is particularly applicable to the leaders of small units, of platoons, of squads, and of groups within squads.

Except when units are acting independently, supporting artillery with forward observer parties to control fire, will assist in the attack, as will heavy mortars. It may be necessary to hold up an attack until artillery and heavy mortars can be registered. This will be done when artillery support is essential as in the reduction of a system of enemy bunkers or pillboxes, with which small infantry units cannot cope with their organic weapons. Artillery and mortars are "man savers," but in order to profit from the effect of their fires troops must be trained to close with the enemy immediately after barrages have lifted. If there is a delay in the assault the enemy will have time to recover from the shock of the high explosive bombardment and will be able to man his automatic weapons effectively.

Opportunities to use tanks in jungle country will be comparatively rare. In one jungle operation the type and organization of the enemy defensive system was such that tanks proved to be the only effective means of getting at the pillboxes to destroy them. Roads were cut and corduroyed by engineers protected by ground troops and tanks were moved up as closely as possible to the front lines before the attack. When the time factor permits preparation of roads by the engineers, tanks can be used. The necessity for close support must be constantly stressed.

Since pilots are unable to see through a jungle canopy, aircraft are unable to realize their full potential in close support of attacking ground troops in the jungle. Aircraft can and do carry out preparatory bombing and strafing missions but because it is difficult to indicate a spot jungle target

to the pilot by signal or to describe it to him by radio, he can do no better in most cases than to bomb an area. Area bombing can be controlled and the safety of our own troops assured by the establishment of daily bomb lines. This type of bombing is effective provided the area is not too large and the concentration of high explosive can be made heavy. Located ground targets can be pointed out to aircraft by the use of smoke shells fired by the artillery or by mortars.

It is not often that the 37mm gun (a direct fire weapon) can be used to assist the attack. To manhandle this gun into a position from which it can fire effectively on enemy bunkers or pillboxes requires in almost every instance the exposure of the gun and the crew. The gun is not sufficiently mobile for the infantry to move it along with them. For these reasons its use is limited in attack situations. In the defense, firing canister ammunition, it is indispensable.

The jungle affords opportunities for surprise both in the attack and the defense. It may often be possible to get at the enemy before he knows of your presence. On the other hand our forces may be very close to him before we realize that fact. This should never happen if our security is functioning properly.

Jungle combat consists essentially of the coördinated action of small groups of infantry armed with the weapons they are able to carry on their backs. Once they engage in close combat, conditions will not permit them to receive much help from heavy supporting weapons.

Training for Jungle Combat

TO be prepared for jungle fighting, the Marine must be trained technically, tactically and mentally. His nervous system must be prepared for the shocks it will receive in the jungle. This preparation might be called psychological training. Essentially, training necessary to prepare the Marine for combat in any area.

All Marines must receive basic jungle training. This applies to service troops, ground aviation personnel, aviation engineers, pioneers and others.

The Marine must be trained in the use of all arms organic to the infantry company. He must receive thorough basic instruction and continuous practice in the following weapons: rifle, automatic rifle, carbine, hand grenades and antitank grenades. He must receive comprehensive indoctrination (which should include both instructional and field firing) in the light machine gun, the 60mm mortar and the "bazooka." He must know how to field strip and assemble the weapons that have been mentioned, and how to recognize and reduce stoppages. He must understand the functioning of these weapons. He must be familiar with their capabilities and limitations as to range, rate of fire, accuracy and destructive effect. He must know what spare parts and accessories are necessary to keep these basic weapons in operation, and how to use the accessories. He must know how to clean and how to care for the basic weapons.

It is essential that he know how to fuse and cap high explosive charges and how to apply them.

Instruction must be given in the use of fragmentation, smoke, and thermite grenades. All personnel must be trained to throw hand grenades accurately. After initial instruction, all throwing practice must be carried out in uneven and wooded terrain with men throwing from behind logs and stumps and from fox holes and trenches. The essential requirement is accuracy; distance is secondary.

The necessity for conservation of ammunition in battle must be stressed in training. It becomes second nature to a man to use ammunition wisely. Fire team and squad leaders must constantly be alert and control fires during training exercises. The exercise of rigid fire discipline will be essential in action and must be emphasized in training.

A minimum of three men per squad (one per team) should be qualified flame-thrower operators.

Jungle combat often requires quick shooting, as targets will normally be visible for only a second or two at the most. Men must have training in getting their pieces to the shoulder rapidly to fire from an off-hand kneeling or prone position. If ammunition allowances permit, all personnel should be trained to fire from the hip.

The Marine must be taught to study the ground so that he will realize what protection it can offer him and how to utilize it to his advantage and to the disadvantage of his enemy. He must understand the technique of concealing himself by use of both natural and artificial methods.

He must know how to dig fox holes, entrenchments and emplacements, and above all how to camouflage them; how to advance by crawling and by creeping; how to pass under and over wire; how to use a compass; how to read a map; how to swim. He must be given a thorough course in field sanitation and personal hygiene, and he must be disciplined if he violates the requirements of either. He must be taught elementary first aid.

The basic technical training of a Marine in a rifle company is not complete until he is capable of instructing other Marines in any of the subjects that have been mentioned.

All troops must be trained to use enemy rifles, light machine guns, heavy machine guns, light mortars and hand grenades. It is particularly important that men hear both the light and heavy machine guns fired. These two guns (particularly the light) are the framework of Japanese defensive positions. If the men can hear these guns fired they will learn to recognize them by their sounds and their cyclic rates and to distinguish them from our own.

Enemy antitank and antipersonnel mines and common booby traps should be shown and demonstrated.

The Marine must be trained in the tactical use of his weapons. In the jungle, fields of fire are limited and men must learn where to emplace automatic weapons to get the most from them. Machine guns and automatic rifles, whenever possible, should be positioned to fire through gaps between attacking units and from the flanks as long as they can do so without endangering the advancing troops. Jungle conditions rarely permit overhead fire.

Automatic riflemen and machine gunners must realize that in attack they may have concealment but will have little cover. Therefore, they cannot hope to remain in the same position to fire more than two or three bursts. Machine-gun crews must learn to move their weapons to an alternate position in a matter of a few seconds. Automatic rifleman must learn how to move quickly from one position to another.

In the defense, the weapons must be placed so as to lay down bands of fire across the front of units to the right or left. Generally, machine guns and automatic rifles should be placed low to cover most likely avenues of approach, but some automatic rifles should be placed in trees.

Men must learn how to conduct themselves on the trail and how to move quietly. They must become imbued with the realization that violations of trail discipline often mean the difference between success and disaster.

Tactics of the squad and platoon, with particular emphasis on the squad and groups within the squad, must be repeatedly explained, demonstrated and applied in both day and night training.

While the foregoing is applicable to training for war in any theater, in jungle warfare the individual and the small group are such important factors that their training must be emphasized if necessary at the expense of that of the unit training of higher echelons such as battalions, regiments and divisions. If the squads are good, the regiments and divisions will be good.

Men who are not in the best of physical condition cannot hope to last in the jungle. Continuous emphasis must be placed on physical conditioning. Officers and men must follow a strict regime designed to increase stamina. In the final periods of training, all work should be in the field. Swimming has proved one of the best of all around exercises, and in most training and staging areas, facilities exist for swimming. Obstacle courses can be constructed of materials locally available.

This proceeds hand in hand with tactical and technical training. The Marine must be taught to understand the meaning of the word "discipline" in its many applications, such as "malaria discipline," "trail discipline," and "fire discipline." He must understand what is called "administrative discipline," which is care of his clothing, equipment, weapons, ammunition and the spare parts and accessories for the weapons. The necessity for conserving food, for taking atabrine, for using the mosquito net, for keeping himself clean, for strictly carrying out all field sanitation requirements, for immediately turning in all documents and papers, for camouflaging his foxhole, and for scores of other measures must be explained to him, and he must understand that the requirements of discipline in these cases will be rigidly enforced.

Under most circumstances souvenir hunting is a serious violation of military discipline. Under all circumstances it is an extremely dangerous pastime. A man who is injured by the explosion of an enemy mine or booby trap while searching for souvenirs has endangered his own life and that of his comrades.

Men must be trained to be alert, to think, to act. They must have it constantly drummed into them that when they are confronted with a battlefield situation there is nothing worse than to do nothing. The Jap has demonstrated repeatedly that he is at a serious disadvantage when confronted by an opponent who thinks and acts quickly.

Cultivation of the senses of sight and hearing is a part of mental training. In all training the cultivation of perception must be stressed. Because visibility in the jungle is low, a man must often primarily depend on his senses of hearing and smell rather than on his eyes.

Marines must be taught the necessity for silence. Many, many Marines are dead today because they talked when they should have been listening.

Instruction must be given about the Japanese so that the men will know something of the people they are fighting, the weapons they will encounter and the tactics and ruses that will be used against them both in the attack and in the defense.

This is a phase of training that is extremely important and is often overlooked. Training problems must involve the use of plenty of live ammunition. During night training exercises, flares, fire crackers, blanks and explosive charges must be used. This will assist in adjustment of the nervous system to battle conditions.

The jungle (without the added complication of an enemy who is there for the particular purpose of killing Americans and our Allies) is forbidding to those whose acquaintance with it has been restricted to public parks. A night spent in the woods in a fox hole under conditions of complete blackout is a new experience to most men. Psychological preparation for the jungle should include training under such conditions in thick or wooded country. If no jungle training areas are available, the jungle must be described. Motion pictures depicting jungle action are available and should be shown. This will help prepare men for the jungle, and it will not be entirely strange to them when they first see it.

Japanese snipers are dangerous but overemphasis of them must be discouraged. The average Japanese soldier is a poor shot. The men selected as snipers are better, but they do not approach our standards of marksmanship. They must be hunted down and destroyed by sniper stalkers working in teams. Sniper stalkers work independently of a column movement.

During field training men should be required to carry their arms with them at all times; while they are in the chow lines, while they are attending sick call and when they are called before the commanding officer. This helps develop the idea that the weapon is part of the man and belongs to him as much as his arms or legs do.

The quality of patience must be developed. This is not a characteristic with which Americans are endowed. On the contrary, most Americans are too impetuous. However, it is a quality that is necessary in jungle warfare, and men can be trained to be patient. This quality should distinguish scouts, snipers, sniper-stalkers and personnel assigned to intelligence duties. These people will often find themselves in positions where if they are patient they will be richly rewarded but where, if they become fretful and impetuous, they may forfeit their own lives as well as those of many of their comrades.

A course in patience training can be made part of sniper training. Dummies can be manipulated to expose parts of their "bodies" momentarily. Only on the third or fourth exposure, after perhaps ten minutes have elapsed, does the operator offer lucrative targets. If the sniper under training has in the meanwhile, fidgeted, cursed, changed his position, fired at the dummy's arm or dropped his canteen, he is declared dead, and the dummy the winner.

As the small group is the basic tactical element in the jungle, the training of squads and of groups within squads

must receive the most emphasis. The training should be contrived to develop alertness, initiative and leadership, particularly in noncommissioned officers. Initiative might be defined as immediate intelligence reaction to situations. There is no place in the jungle for those who are not alert and who do not react promptly.

If jungle terrain is not available, squad problems in woods by day or night will serve to develop the qualities that are necessary.

In every case, situations should require execution. Squad leaders should not be permitted merely to indicate how they would cope with a situation. They must be required to cope with it.

Proper use of the automatic weapons in the teams within the squad must be stressed.

The conception that he is a member of a team must be developed in every member of the squad.

The squad should be instructed how to act in the advance guard, in the rear guard, as a combat patrol, as a flank patrol, and as a reconnaissance patrol. It should be taught how to set an ambush and what to do if it is caught in an ambush.

Defense groupings must be explained, the various possible patterns pointed out and the squad required to assume the defensive by day and night. The value of active defense in jungle combat must be emphasized.

Execution must follow such instructions, for, while men remember very little of what they have been told, and not much more of what they have seen, they are not likely to forget what they have actually done.

During the preparatory period, the men of a squad should eat together, sleep together, and have liberty and privileges at the same time. They should have working party assignments as a group. The platoon leader should never take three men from each squad to make up a nine hand working party. Rather, he should take one entire squad. Constant stress on group cohesion and unity will nurture the attitude in the men that they are members of a single team.

The purpose of automatic battle action is to train men to cope quickly with a situation. In the jungle the initiative must be seized and retained. As applied to a squad which is attacked while in a column of files on the trail, "Automatic Battle Action" would consist of the execution, on order of the leader, of one of a number of previously rehearsed plays. The leader may give his order for the play verbally or by whistle. (Hand and arm signals, while they may be used on the trail, are unsatisfactory in action in the jungle. No one ever sees them.) An example of such an order given by a squad leader might be: "Able O.K.; Baker, Charlie with me. Number one. Repeat. Number one. Have you got it?" To all squad members the order means; "Team number one stay where you are, continue the fire fight. Teams two and three execute prearranged play number one. I will lead you. Is this understood?" Team leaders should replay "Roger Able." "Roger Baker." "Roger Charlie."

Automatic battle action should be practiced by squads and platoons until they have developed speed, precision and silent execution.

Individuals and units cannot be expected to conduct themselves properly in the jungle at night unless they have been trained at night. In thick jungle, it is impossible to move for any distance at night unless the movement is over a trail or a marked route. It is extremely doubtful if even the natives could move through thick jungle at night, and reports that the Japanese are able to do so are not true. Japanese training doctrines, while they stress the importance of night attacks, recognize that movement of large bodies of men through the jungle at night is not possible. The Japanese have been able to move at night because they have done so over trails and routes which have been reconnoitered and marked in the daytime.

Movement along trails or tracks at night is possible although progress will be slow. If the movement is to be over a relatively short distance, ropes or vines can be used to mark the edges of the trail. There is much phosphorescent wood in the jungle, and this can be used to mark trails. A handkerchief or white cloth pinned on one's back will help the man behind keep contact with the man in front of him. Men may have to hold to one another's pack or belts. When any movement is undertaken at night, it must be slow; the formation must be kept closed up so that contact will not be lost and all communication must be by whisper.

In training for night operations, troops must be required to move over trails through woods or forests, to bivouac in woods or forests and to dig in. Conduct of the defense should be stressed. Troops must be habituated to the noises that occur in the woods at night, and they must learn how to identify sounds such as those made by a person coughing; a rifle bolt being pushed home; a safety being unlocked; a machine gun being loaded; the sounds made by chopping brush, and so on. At night, in the jungle, these noises carry for some distance.

The operation of crew-served weapons must be practiced at night until personnel develop the ability to handle their weapons and ammunition with ease in darkness.

Events of a Month

(Continued from inside front cover)

May 4—The Japanese score further gains in the battle for the Hankow-Peiping railroad.

Allied forces make further landings northwest of Hollandia.

May 5—**A Tokyo communiqué reports the death, in an airplane accident, of Admiral Mineichi-Koga, chief of the Japanese fleet. He has been succeeded by Admiral Soemu Toyoda.**

Troops under General Stilwell take the Japanese garrison of Inkagahtaung in northern Burma.

The North Atlantic Division of the Army Corps of Engineers announces that, after 27 months of hard labor, the American bases on the island of Greenland have finally been completed.

May 7—The continent is again attacked by 4,500 planes based in Britain and Italy.

May 8—The Allied drive down the Mogaung Valley in Burma continues while Chinese forces stop the Japanese advance on Loyang.

American casualties in the Hollandia action include 28 killed and 95 wounded.

May 9—Admirals King, Nimitz and Halsey meet in San Francisco to plan Pacific naval strategy.

THE UNITED STATES

April 11—Major General Lewis B. Hershey, Selective Service director, issues a short list of occupations making irreplaceable men under 26 engaged in them eligible for exemption from the draft.

April 12—Speaker of the House Sam Rayburn reveals that Secretary of State Cordell Hull intends to consult members of both the House and Senate on international affairs.

April 13—Paul V. McNutt, chairman of the War Manpower Commission, declares that the manpower situation is relatively good but that all vital workers must remain on their jobs in essential industries.

Secretary of the Interior Ickes defends the release of Japanese-Americans from relocation centers during wartime and terms those on the West Coast who oppose the resettlement of loyal Japanese-Americans "professional race mongers."

In Honolulu, Judge D. E. Metzger rules that military government in Hawaii is invalid despite the testimony of Admiral Nimitz and Lieutenant General Richardson that martial law is necessary.

Secretary of the Interior Ickes proposes that the government-built war plants be turned over to veterans of World War II for ownership and operation in competition with existing privates industries as a bonus payment.

The House of Representatives passes the Navy Appropriation Bill authorizing expenditures of $32,648,134,336, the largest amount in Navy history.

April 17—A new airliner, the Lockheed Constellation, crosses the country from Burbank, California, to Washington, D. C., in six hours and 58 minutes, setting a new record.

The House passes a bill giving civil service preference to service men and women.

April 20—A report of the House Military Affairs Committee charges that the armed services and the War Manpower Commission have the legislation necessary to meet manpower problems. The report recommends the drafting of 4-F's into "appropriate non-combatant duty."

A subcommittee of the House Naval Affairs Committee recommends immediate steps to assure the full ownership of the Atlantic bases leased from Great Britain in 1940 for 99 years.

April 22—Secretary of War Stimson makes a plea for national unity as a prerequisite for the invasion of Europe.

Eight members of the Senate Foreign Relations Committee are named by the committee chairman to confer with the Secretary of State Hull on plans for an international organization.

April 23—President Roosevelt orders Montgomery Ward & Company, a mail-order house, to comply with an order of the National War Labor Board and directs the United Retail, Wholesale and Department store Employees of America, a CIO union, to end its strike against the Ward company. The strike, begun on April 12, is the result of the company's refusal to heed a NWLB order directing that the expired contractual relations between the union and the company be continued until the board can determine whether or not the union still represents the majority of the employees. The company's original charge was that the union no longer represented the employees. The union president wires his compliance with the Presidential order to end the strike.

April 24—Selective Service Director Hershey states that there will be a rescreening of large numbers of the 3,600,000 men in the age group of 18 to 38 who have been rejected as physically unfit.

Loss of life, property and livestock results from heavy floods in five midwestern states—Indiana, Illinois, Iowa, Kansas, and Missouri.

April 25—Secretary of War Henry L. Stimson and Deputy Chief of Staff General Joseph T. McNary recommend the unification of all the armed forces under a single command at the end of the war to avoid "duplications of time, matériel and manpower."

Foreign Economic Administrator Leo T. Crowley reports that the United States shipped 30,000 planes, 25,000 tanks and 800,000 other military vehicles to its Allies in the three years of lend-lease.

April 26—United States troops take possession of the Chicago headquarters of Montgomery Ward & Company after the Under-Secretary of Commerce makes two futile attempts to take over the company's facilities.

April 27—A special Senate subcommittee that has studied the plight of the "white-collar" worker reports that wage ceilings have imposed upon this group an "inequality of sacrifice" and urges that government controls for this group of 20,000,000 be dropped.

The Midwestern floods continue as new rains cause a rise in the Mississippi and Missouri Rivers.

April 28—Secretary of the Navy Frank Knox dies of a heart attack.

The Gallup Poll reports that labor will support President Roosevelt if he runs for a fourth term.

Donald M. Nelson of the War Production Board reports that the production of munitions in March rose three per cent above the February level.

April 29—The injunction granted the government restraining Ward Chairman Sewell Avery and other company executives from interfering with federal operation of the plant results in the withdrawal of the troops that seized the properties by Under Secretary of Commerce Wayne C. Taylor.

April 30—General Douglas MacArthur issues a statement declaring that he neither desires nor will accept nomination for the Presidency.

The American-financed oil project in northern Canada is opened and is ready to begin delivering fuel for the Allied war machine.

May 1—The government's trial of 30 men and women charged with seditious conspiracy is stopped when Chief Justice Edward C. Eicher charges one defense counsel, James J. Laughlin, with contempt of court.

May 2—Two pro-Roosevelt Senators, Claude Pepper and Lister Hill, are renominated in the Democratic primaries in Alabama and Florida, respectively.

Frederick Heizer Wright is placed on trial in federal court for serving as an unregistered Japanese propaganda agent prior to Pearl Harbor and for conspiracy to violate the law, requiring such agents to register.

The Aircraft Production Board reports that airplane production for the month of April dropped to 8,343 planes.

May 3—Vast supplies of meat result in an Office of Price Administration order making all meat except steaks and roasts of beef free of ration points at the same time that red point allowances are cut in half.

The Polaroid Corporation announces that two Harvard chemists have produced synthetic quinine.

May 4—The Army, Navy and Selective Service system favor legislation assigning those classified in 4-F into special work units.

The War Department announces that it has sent instructions to all service commanders for the impartial dissemination of political information to all soldiers.

May 6—Executive director of the War Manpower Commission, Lawrence A. Appley, declares that war production has reached a leveling-off and that "partial demobilization" is the next production phase.

May 8—With only one opposing vote, the Senate passes the House-approved lend-lease bill extending the program for another year.

The drive for the renomination of President Roosevelt for a fourth term is interpreted as having been begun through the speeches of Democratic National Chairman, Hannegan and Senate majority leader Alben W. Barkley at the Jefferson Day dinner in New York. Mr. Hannegan states that "the people of the United States are determined that Franklin D. Roosevelt shall complete the assignment which destiny has given him."

John L. Lewis withdraws the application of the United Mine Workers of America, made on May 17, 1943, for reaffiliation with the American Federation of Labor.

The Supreme Court denies pleas made by the state of Texas for a rehearing of the April 3 decision of the Supreme Court that Negroes have a constitutional right to vote in Texas Democratic primary elections.

May 9—The government returns the Chicago plants of Montgomery Ward & Company which were seized on April 25 to Ward officials. The action is timed to coincide with the completion of the National Labor Relations Board election in the plants to decide whether the United Mail Order Warehouse and Retail Employees Union represents a majority of the workers. A few hours after the return of the plants to private management, the union establishes its claim to representation of the majority.

The War Department reports that the Army has increased its strength from 513,410 on November 1, 1940, to 7,481,923 on January 1, 1944.

Books for Marines

JAPAN'S ISLANDS OF MYSTERY

By WILLARD PRICE

The 264 pages of this book offer the most comprehensive and interesting encyclopedia of Micronesia one is likely to find. And it undoubtedly contains the most recent authoritative information available to the general public about the islands of Micronesia (the Carolines, Marianas, and Marshalls). The author had spent many years in the Far East, writing for American and British publications; and, in 1935, he and his wife journeyed from Tokyo through Micronesia, ostensibly as research scientists. They recorded the habits of the natives, the geography of the islands, the flora and fauna—and the Japanese fortifications. **$3.00.**

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